

# JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

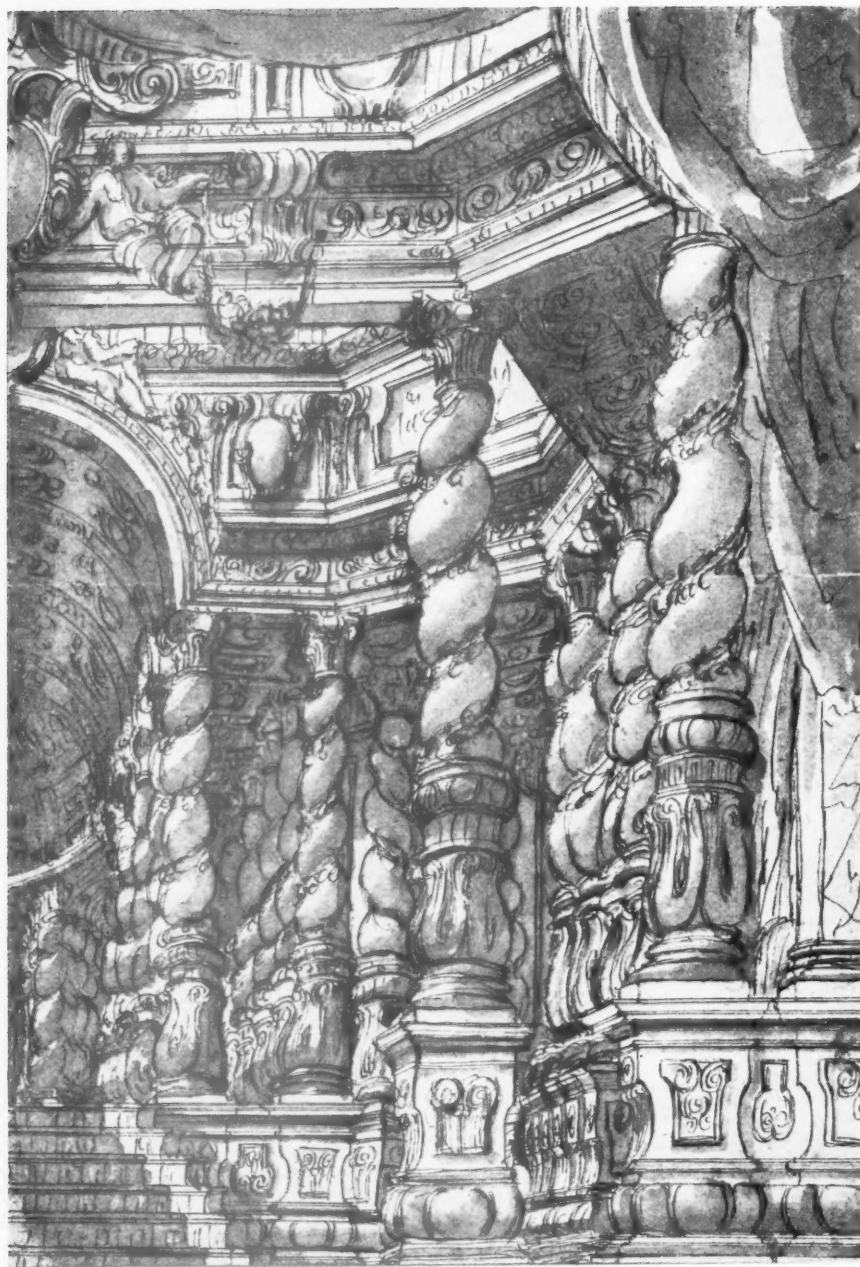
THIRD SERIES

VOL. 39. No. 11

2 APRIL 1932

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From a drawing by Ferdinando Galli da Bibiena (1657-1733)  
In the Drummond Stewart collection, R.I.B.A. Library

# JOURNAL OF THE ROYAL INSTITUTE *of* BRITISH ARCHITECTS

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## Journal

In *The Times* a few weeks ago there was an article on the last fifty years in art by Professor Henry Tonks, who in his last paragraph quoted a saying of Goethe's that all eras in a state of decline and dissolution are subjective; on the other hand, all progressive eras have an objective tendency. Professor Tonks cautiously refrained from prophecy, and left the inferences to be drawn by his readers. We, who practise the most liberal of the arts may, however, step in and define the implied moral for ourselves.

The dry phraseology of subjective and objective can perhaps be paraphrased to say that the progressive man is he who has set his course by the stars, who knows where he is going and whose whole life is governed both by intelligence and faith. The man of dissolution and decline is one whose life is all the time turning into itself, one who is not concerned with an objective above and beyond but with the finicky business of self-criticism and self-adjustment to conform to canons of this, that and the other. He may have knowledge but no wisdom, he may have a light, but it is but a candle in his own hand.

It is a happy chance that the scholarly and beautifully phrased paper read to the Institute just before Easter by Professor J. W. Mackail is followed in this JOURNAL by an address from Dr. Stradling on "The Problem of Originality," because both papers, suggestive and stimulating in every paragraph and supplementing each other, can do much to help us to attain to this desirable progressive state. The problem of originality is, perhaps, the greatest difficulty that the architect to-day has to meet. The simple application of traditional forms can no longer solve most of our problems; the glut of new materials, each one of which yields a viper's brood of difficulties to complicate the practice of architects, can

only be met with success by one equipped "with a large and liberal education," to use Professor Mackail's words. "An education that shall have taught him how to learn, shall have made him know the difference between knowledge and half-knowledge, shall have fed his intelligence and his imagination, shall have made him acquainted with tradition and equipped for experiment" . . .

In such a period as this it is, maybe, inevitable that there will be much groping in the dark; but groping in the dark need not be unintelligent, nor need the objective be unknown. If and when movement is unguided by intelligence it is mere wandering disconsolate like Shelley's waning moon, "led by the insane and feeble wanderings of her fading brain." No great period in the history of any art or science has come or has developed without some dominant faith as the prime mover of the work. Such faith must be allied to knowledge—blind faith cannot form the basis of a creed for those who, like architects, must lead; let us, then, be so certain in our way that those multitudes who cannot profess to knowledge may willingly follow our convictions without question. Our problem now is to suggest means by which this faith can be established.

There has been in the past few years a widespread tendency to attempt to improve ourselves by the essentially subjective and ruminative method of illustrating the bad things, as if by the continual insistence on faults in the past a new enthusiasm to do better in the future will grow; but it is seriously to be doubted whether such negative criticism can do good to anyone; in many cases, indeed, such criticism merely alienates the favourable opinion of those whose support is most desired and appears only as laughter from the clouds and intellectual snobbishness. The other and positive way—the objective way—is to "lay hold on faith" and en-

courage the good until the smallest good thing falls into its place in a broad creed of excellence that has in it all the seeds of enthusiasm and religious vigour.

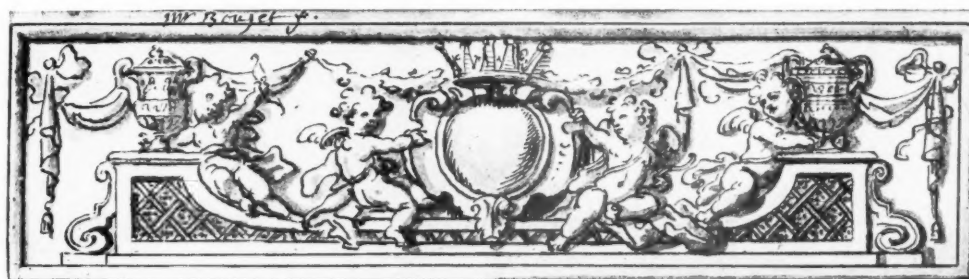
There is no lack of portents on every side to show that there is a growing determination to meet this problem of originality with the intellectual and spiritual vigour it deserves and demands. This vigour is not the private property of any one sect or school of architects in this country nor is it the child of the "modernists" rather than the "traditionalists"; as Professor Mackail and Dr. Stradling have implied, there is need for the contributions of both. It is most vividly expressed in a desire to make the best, and not merely as hitherto a muddled and inconsidered use of all the new materials and means and sciences that are the background of our art. There are many ways in which this is shown. The last few weeks, for instance, have seen the inauguration of the Building Centre, which should help enormously to improve standards and bring our science into a right relation to our art. There has been for many years in the past the Building Research Station at Watford, working quietly under Dr. Stradling's direction at the improvement of the stock-in-trade of architecture, producing practical results of the greatest possible service to the building world and publishing such invaluable pamphlets as the *Building Science Abstracts and Reports*, and within the limits of the R.I.B.A. there is continual effort being made by the Library and the JOURNAL and the various committees to do more than merely meet a need in a just sufficient way. We hope, for instance, in the near future to start in the JOURNAL a regular series of technical articles on various types of buildings and aspects of practice that have not yet been dealt with adequately elsewhere, so that the JOURNAL may play a bigger part in helping members of the Institute to be informed in the latest and best practice. And as another example, in the past year has been published one of the best books that has ever come out of the architectural profession or been offered to it; a book on acoustics that combines scholarship and science, knowledge and appreciation of tradition with a kind of spiritual vigour that somehow makes even the least considerable elements so ably dealt with to fall into their place in a broad creed of excellence.

Many other instances could be given of this enlivening architectural vigour—objective and not subjective. Such

examples as the few we have quoted and not the talk of the theorists are the real influences formative of architectural styles. "At all times," says Dr. Stradling, "when progress is being made, original conceptions are emerging and the problem is thus always present of how tradition is to assimilate the new conception," and this, to use a sentence from Professor Mackail's paper, is "a problem that demands of the architect both insight and imagination, both faith and courage."

Perhaps few post-war memorials in any country are more simply and straightforwardly successful than that illustrated on this page, by which the town of Mainz commemorates Gustav Stresemann, Foreign Minister of Germany and one of the greatest of her sons. It is admirably placed—facing out to the Rhine at the end of a public garden between two avenues of fine trees. A silvery travertine from German quarries forms the external structure, and a similar stone of golden-yellow colour lines the plain rectangular top-lit chamber within the central mass. There is no ornament: the attention is entirely concentrated within on a fine bronze bust of Stresemann, without on the German eagle and the bold inscription in a continuous band below the coping. Such economy and concentration are the characteristic principles of a Neo-Classicism which has been one of the most fruitful motive forces in the European architecture of the last hundred years. Great Britain is not without fine examples, but they have been far too rare in recent years.





## A LAYMAN'S THOUGHTS ON ARCHITECTURE

BY PROFESSOR J. W. MACKAIL, M.A., LL.D., F.B.A. [HON. A.].

A PAPER READ BEFORE THE ROYAL INSTITUTE OF BRITISH ARCHITECTS ON MONDAY, 21 MARCH 1932

THE PRESIDENT (DR. RAYMOND UNWIN) IN THE CHAIR

I AM fully aware that in coming to-night to offer a layman's thoughts on architecture to an audience of architects I am taking my life in my hand. But when the Council asked me to read a paper, it did not become me as an Associate of the Institute to refuse. The title of this paper was suggested to me by a member of Council; under it, as he observed, I could say anything I chose. I hope that within so wide a range, it may at least offer points which may raise interest to the extent of provoking discussion.

This, too, must be borne in mind: it is for the layman that the architect works, and to the layman, as individual or corporation or community, that he has to make his work acceptable. The thoughts, therefore, of a layman of average intelligence are for the architect of no inconsiderable importance.

First, then, what is architecture? Before discussing it, it is advantageous to be clear as to what we mean by it. It is an old and sound maxim of civil law that definitions are hazardous. Such of them as are mere figures of speech, *e.g.*, that architecture is the rhetoric of building, or that architecture is frozen music, may be dismissed as unhelpful; they are fireworks rather than illuminants. As a working definition, Sir Reginald Blomfield's "art of ordered building" is excellent; it has to be added, however, that the two words "art" and "ordered" require, as they repay, careful study. It is useful to recollect that "art" originally meant "practice," just as "science"

originally meant "knowledge." Science in its more specialised sense, a body of generalisations based on observation and experiment, is inseparable from art. Applied science is, in fact, art, in the widest sense of the word art. But applied art is meaningless; art not applied, practice not practised, does not exist.

It may not be amiss, if you will not think it pedantic, to go back for a moment, as we have so often to do, to the Greek usage from which our terminology is derived. Ἀρχιτέκτων, "head-constructor," is a word first known to us in Herodotus. He uses it twice; once of the constructor of a tunnel driven through a hill in Samos to carry a supply of water to the town, and once of the constructor of Darius's bridge of boats over the Bosphorus; both of these, you will observe, being what we would call engineering rather than architectural works. From this word ἀρχιτέκτων came the name for his business, ἀρχιτεκτονική; and these words were Latinised as *architectus* and *architectura*. In this business or employment, Cicero observes in a phrase of striking double significance, *non mediocris utilitas quaeritur*. It was an art or practice, he meant, of obviously great usefulness, more so than, for instance, music or painting. But if we think of it as not merely an art, but a fine art (a liberal art, as our ancestors used to say), it is fundamentally true that, as such, it aims at and accomplishes something different from, and higher in the scale of human value than, *mediocris utilitas*, "commonplace usefulness."



Further, as Greek thinkers also realised and insisted, it is not only a fine art, but the mistress-art. Other arts, in so far as their work is embodied in visible and tangible material, are, or ought to be, subordinate or ancillary to it. And even in those arts the products of which are immaterial, in music for instance, or in literature, we speak by an easy metaphor of their architectural quality. The Greek doctrine then was this: just as in the sphere of human life there is one supreme science, that called *πολιτική*, corresponding to one supreme end, that of ordered human life, or what we call in a single Latin word, civilisation, so in the sphere of workmanship there is one supreme art, *ἀρχιτεκτονική*, corresponding to one supreme end, that of a material environment in which civilised mankind may fitly live.

It is an august ideal. How can it best be translated into modern terms and applied to the present day? And how far is the problem one of education in its widest sense? not only the education of the architect, but of those who work under him, and of those for whom he works; of the governing class if there be one, or of the whole nation?

The prizes offered by the Institute are meant, we are told, "to make students exercise skill and imagination within carefully designed conditions." Conditions are prescribed by the purpose of any particular work. But skill and imagination are the same in kind, however much they may differ in degree, in their application to all an architect's work. At one extreme, you may have a National Memorial or a Liverpool Cathedral; at the other, a four-roomed cottage or a 108-a-week County Council house. The virtues of good, the vices of bad, architecture are the same in all.

When the Arts and Crafts Exhibition Society was founded, and its object stated as being "to bring art into daily life," the meaning was excellent, but the way of expressing it questionable. It might even confirm the man in the street in his indistinct notion that art is something that can be brought into life instead of growing out of it; that it can be laid on like gas or water. There is some similar confusion in the statement of an aim set before students, to seek to make "an architecture expressive of the age in which we live." That doctrine sounds plausible. But when one looks into it a little more deeply, it seems not to carry one far. For the architecture of any age, for good or for bad, *is* the expression of that age. There is no getting over that. It applies equally all round. It applies, for instance, to the civic and domestic architecture of the mid-Victorian period in London summarised by Dickens in 1864 as "respectfully descriptive of getting up at eight, shaving close at half-past,

breakfasting at nine, going to the City at ten, coming home at half-past five, and dining at seven." Victoria Street and Cromwell Road express their age.

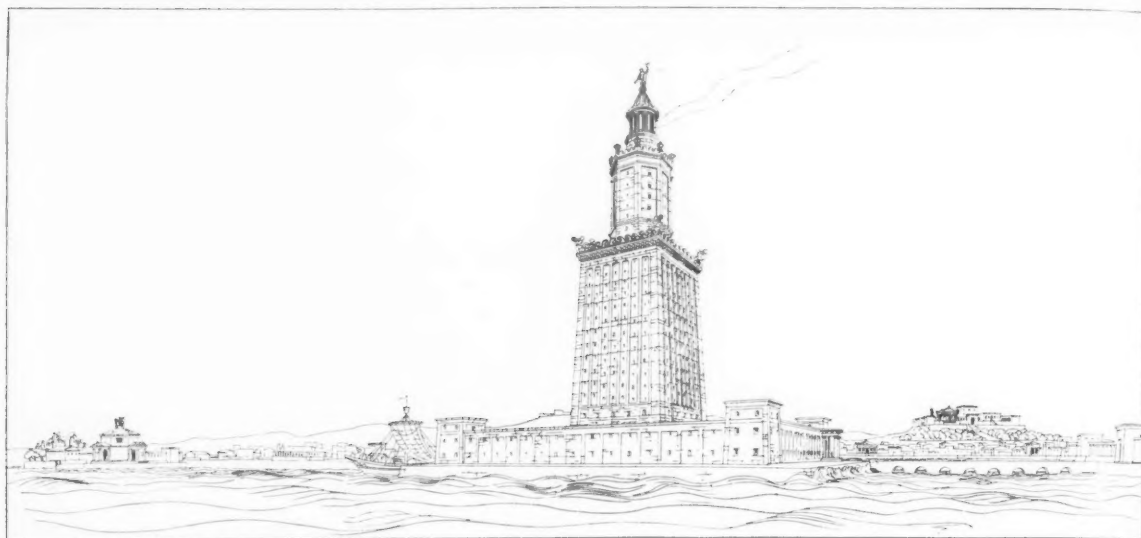
Architecture keeps adapting itself, whether consciously and deliberately or unconsciously, in organic development or under external pressure, to changing civilisation. The process goes on; only it is partly masked by the fact that the effects lag behind the causes. Revolutions in architecture mean its adaptations to new purposes, to altered methods of life. Taking a long view (and for the architect, if he is to be, as his name implies, master of his art, long views are essential), there may be traced in it a periodic movement; but, as with development in live organisms, that movement is not in a circle returning into itself, but in an elliptic spiral. Newton's law, the first proposition of the *Principia*, applies here: equal areas are swept over in equal times. When near the focus movement is very rapid, when far from it very slow. It may remain almost stationary for a millennium; it may transform itself in a single generation. A few illustrations may be taken from history.

The static civilisation of the Euphrates and Tigris valley expressed itself in an architecture which was an anticipation, so far as the available material allowed, of that of the twentieth century. In structures such as the Empire State Building or Panhellenic House in New York, a Sumerian or Babylonian architect of 4,000 or 5,000 years ago would have seen realised in steel and concrete what he was trying to do himself in sun-baked brick, sometimes lined with fired and painted tiles, or with slabs of gypsum which, like the timber beams for roofing and flooring, had to be imported. The Ziggurat, with its recessed storeys, raised as high as it would go short of collapsing from its own weight, was the early skyscraper. The legend of the Tower of Babel is no doubt founded on fact. It was historically repeated in the collapse of that prodigy of late mediaeval architecture, the central tower and spire of the Cathedral of Beauvais. In both periods, scientific engineering, and the manufacture of synthetic building material, came far short of what architects wished to do. Much later, yet still in prehistoric times, the Minoan architects, building in stone, carried their achievement to a higher pitch. The great tower-like structures of the capital of the Minoan Empire were shattered by earthquakes. Another Minoan building in Etruria, of which no vestige was left in Roman times, rose, according to the tradition recorded by Pliny, in a mass of domes and spires to the height of 600 feet. Pliny discredits the figures. But they are perhaps not incredible.



"The Architect"

*"In structures such as the Empire State Building the Sumerian or Babylonian architect . . . would have seen realised in steel and concrete what he was trying to do in sun-baked brick"*



*"The great lighthouse and watchtower . . . a near relation of the modern skyscraper"*

THE PHAROS OF ALEXANDRIA, ACCORDING TO THIERSCH

These architectures, like that of Egypt, were the expressions of the civilisation of swarming populations, entirely in the control of a centralised government and supplying unlimited cheap labour. Against these, the civilisation of Greece was a complete reaction. Greece was a region of small communities living a very intense life, and with little turn for mechanical invention. The post and beam structure with which they were quite content involved no intricate engineering problems. The genius of their architects spent itself on study of greater and greater refinements in traditional patterns or rhythms. By devices of which they did not record or did not transmit the secret, by slight but highly-studied deviations from symmetry, by the bulge of the stylobate, by the entasis of the column, by the tilt of the frieze, by the elasticity of the intercolumniation, the architects of the Parthenon, working in close touch with the master-sculptor, produced the wonder of the world. Small as it is in actual size, it is significant to note that its cost, together with that of the subsidiary gateways, exhausted the funds, not only of the city, but of the whole league of which Athens was the head.

Were those exquisite and costly refinements a matter of mathematical science, or of artistic instinct? Apparently the latter. The Greek intuition, in this as in other fields, is unaccountable and almost terrifying. If you had asked Ictinus or Phidias how he proposed to secure progressional perspective in a

four-dimensioned continuum, he would not have known what you were talking about. But that was just what he did secure. Nor did his employers, the community for which the Parthenon was built, concern themselves with such things. "We are amateurs of beauty," Pericles said to them in the funeral speech. It is not exactly what one can imagine a modern Prime Minister or a Chairman of the London County Council saying; least of all at a crisis in a desperate war. But there is no trace of interference by that public of amateurs with the work of the architect, nor even of criticism upon it. When they got at Phidias, it was not to offer advice, still less to lay down the law, about his work; it was to make sure that he had not pinched some of the gold that had been supplied to him for the draperies of the statue of the Virgin. Which sort of lay-interference is the most annoying, it may be left to architects to say.

Architects of the Hellenistic monarchies built on the old lines but on a larger scale. Their machinery and technique were much the same, with a few modifications like the use of lime for mortar. But now they had to build not merely new halls or new temples, but whole new cities. Town-planning became part of their profession; and thus incidentally was introduced street-architecture as distinct from that of individual buildings. There were scores of these new cities. Alexandria was an outstanding typical instance, with its great axial streets over 100 feet wide,



its carefully grouped public buildings, and the great lighthouse and watchtower, a further approach to, and by that time a near relation of, the modern skyscraper, rising to the height of nearly 400 feet in a series of back-stepped storeys, and visible for 30 miles out at sea. For meeting these enlarged demands there were now regular guilds of architects with professional training and a corporate tradition.

The focus of civilisation moved westward. Roman architects, who were primarily engineers, revolutionised the whole of architecture by their two capital innovations: the one structural, the arch with its corollary the vault; the other material, building in concrete. Why the Greeks, who had the arch before their eyes, so to speak next door, for centuries, ignored it so completely, is a mystery. Conservatism in tradition was no part of the Greek character. But contempt for anything that was not Greek, was; and we must bear in mind also that curious childishness, "you Greeks are always children," mixed up with their keen curiosity and swift insight. The history of the arch is a large part of the history of civilisation. It was Asiatic in origin; it was Roman in Europe. But only in the reverse movement in which the centre of the Mediterranean world was shifted back eastward and New Rome became its capital, was the column taught to carry the arch, and medieval architecture created. It took at least 500 years for the Arab pointed arch to be received in the West and for Romanesque to be replaced by Gothic. It took something like 1,000 years for the Asiatic invention of sheathing a building completely in enamelled plating to be accepted and practised here.

The history of concrete is simpler. The Romans had the material for the best concrete in the world lying to an inexhaustible amount just below their feet, and their builders were quick to realise its possibilities. With it, they could do almost anything in the way of structure. Roman engineering, stimulated by constructive genius, produced superb architecture. Constructively, the concrete core with its facing of fired brick makes much medieval building, rubble poured anyhow into the gap between two thin retaining walls of hewn stone, childish by comparison. Those colossal structures were built, as it were, for eternity—the Colosseum in the first century, the Pantheon in the second, the Thermæ of Caracalla in the third. Modern building in reinforced concrete is only a modification of Roman practice. Like its predecessor it may be destined to cease. The old age of concrete came to an end with the economic collapse of the Roman Empire. What the chances are of a similar economic collapse of the modern world it is

beyond our scope to enquire. But short of that, there seem to be indications that for certain kinds of building concrete is already giving place to glass and steel. In any case, steel-framed structures are not meant for very prolonged life. It is indeed one of the advantages claimed for them that they are comparatively easy to take to pieces; and one of the disadvantages of solid concrete, and particularly if reinforced, is, as I understand, that it is laborious and expensive to break up. But praise of a building because it is very easy to destroy, like the praise of Glasgow because it is a very easy place to get out of, is a doubtful compliment.

It is a common feature of the great ages of architecture that they have always been merciless to the work of their predecessors. They made no scruple of destroying it in order to replace it by their own. Where they did not destroy it they were less concerned with preserving it than with improving on it—which they were quite confident they were able to do. Only about a century ago did they become acutely conscious that they could not improve on it: so they began to preserve it, partly from genuine admiration, partly in order that they might have something to imitate. The architecture of the past became for them one vast museum. "He that increaseth knowledge," the Preacher observes, "increaseth sorrow." It was a misfortune that the historical study of architecture and the accumulation of specimens absorbed much intelligence which might otherwise have been applied to creation, and architects were hampered rather than inspired by tradition. The sense of style as a creative force became atrophied, and the domination of styles began.

The age of stucco (the merits of which we have lately come to realise) was an expiring effort towards preserving the tradition of dignity, amplitude, quietness. Its negative virtues lacked potency, and it succumbed. The Regent Street of 1820 was the adequate expression of what it meant to express. What the new Regent Street that has replaced it is meant to express, or what if anything it actually expresses, I am unable to say: perhaps we may be told by those who know. One thing may be said for it: it has not been deliberately planned like some other large-scale work in London—the Empire Hall at Olympia is an example—for its whole façade being used as one immense advertisement hoarding.

One kind of building which it is interesting and instructive to consider separately is the bridge. The bridge is a structure which, while it cannot in the nature of things be isolated from its surroundings, serves an unusually precise purpose. The Roman and



*"These colossal structures were built, as it were, for eternity"*

THE THERME OF CARACALLA

the medieval bridge had both incomparable beauty, and both completely fulfilled the requirements of their time. But the greatest period of English bridge-building was, I think, the latter part of the eighteenth century. The bridge over the Tyne at Hexham (1793) might be cited as a pattern of dignity and proportion, unadorned simplicity and complete adaptation to what were then, and indeed still are, the requirements of traffic. The age of structure in iron (whether or not that is architecture) was by that time already on its way. If Telford, ten years later, had been allowed to carry out his plan for a new London Bridge with a span of 600 feet, his architectural sense—it was not for nothing that he had worked as a mason on Somerset House—might have produced something that had nobility, fitness, and even beauty; something not unworthy of standing beside Rennie's great masterpiece, the final achievement of a whole age of national history and of human culture. May I,

as a mere layman, say one thing more? If Waterloo Bridge is not to be saved, it is far better to destroy it entirely than to mutilate it.

The break with tradition swept bridge-building into chaos. It gave London the elaborate dullness of Blackfriars Bridge, the pretentious monstrosity of the Tower Bridge, and at the very centre of civic and national life, Charing Cross Railway Bridge. Of this last, indeed, one is inclined to think with a measure of indulgence. It is so obviously and unpretentiously ugly that it almost disarms criticism. It is the negation of architecture; but it does not affect to be anything else than what it is. I hope we may be able to say as much of what must some day in the near future replace it.

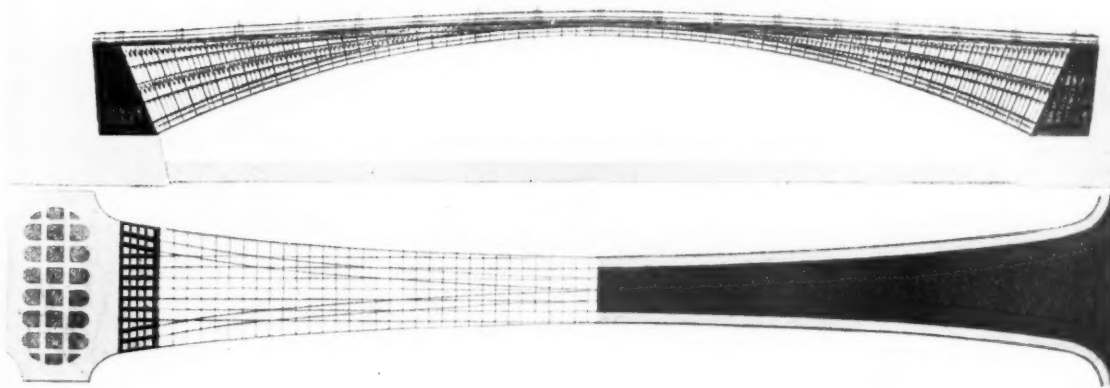
Insincerity is in art (as in life) the unpardonable sin. If impatience with pretence leads people into queer labyrinths, it will in the end lead them out again. You remember the controversy which a few

years ago was carried on over the vestry which it was proposed to put in the angle between the choir and north transept of Westminster Abbey. The outcry against putting anything at all there was vehement. In that, there was reason, though one may reflect that there had been no such indignation expressed about the peeling off and stripping away of buildings that immediately surrounded the Abbey and had grown up against it: yet their removal, on whatever grounds justifiable, was a piece of destruction, an obliteration of history. But the particular point I wish to make is this: the proposed building (a model of which in lath and plaster was put up for criticism) was seriously defended on the ground that it would not be noticed: in other words, that as architecture it would be not only lifeless, but null.

Something similar occurred more recently in connection with the new Bodleian at Oxford. The problem there was to provide storage for some 5 million volumes. It was one of the greatest opportunities for magnificent building. For economic and other reasons that was found impossible; and provision

was accordingly planned for a huge packing case, something, I suppose, like the Pensions Office in Acton Vale. With the feeling that this would not look well (though why it should not, if it were designed by a master of proportion, and executed in well-chosen material, I do not know), a device was suggested for pretending that it was not there. The frontage on Broad Street, an irregular row of undistinguished but quite inoffensive houses, was to be preserved as an empty shell, so that passers-by on the street might not notice that the new building existed. This was called preservation of the amenities of Broad Street. But at the back, overlooking and overwhelming the lovely gardens of Trinity there would be, in Mr. Charles Bell's mordant phrase, a red brick cliff trimmed with drain-pipes. Such is the logical outcome of lack of belief in architecture; timidity passing into cowardice, cowardice issuing in falsehood.

An example, on a large scale, of the red brick cliff trimmed with drain-pipes may be seen not far from here by anyone who likes to go round and look at the



*"If Telford had been allowed to carry out his plan for a new London Bridge his architectural sense might have produced something not unworthy of standing beside Rennie's great masterpiece"*

back of one of the immense blocks of flats recently built in St. John's Wood. The frontage has proportion, simplicity, and a large measure of dignity. For the back, it would be harsh to blame the architect: he was working, in the rather grim phrase I have already quoted, "under carefully designed conditions." Not only the architect, in producing an ordered building, but the client, when ordering it in the other sense of the word, might lay to heart what Phidias said, "The Gods see behind also." It is a phrase terser, more pointed, and perhaps more practically enlightening than that of having regard to progressive perspective in a four-dimensional continuum.

But this last doctrine, if very highly technical in its phrasing, is not meaningless or without value. The space-time of the physicist is also the world in which the architect works. We are learning practically, through the wide outlook given by the study of history, that we live and create, not in a three-dimensioned but in a four-dimensioned universe. Great architects have always known this instinctively. The containing rhythm of any building is a matter of what is called (it is an ugly enough word) functionalism. Function is not a thing, it is a process throughout which things act on one another. A building that functions is organic; it is in a sense alive. It is more in its totality than it is at any given moment. It adjusts itself to its environment. The architect, if he is not building something to serve a purely temporary purpose and then cease to exist, or only exist as a corpse, must foresee or divine what his work will become years or ages later. He builds not only for the present but for the future: a task that requires both insight and imagination, both faith and courage.

It is part of any great tradition that newness is a thing to be exulted in. Where copying begins, creation ends, and tradition which has ceased to create anew is dead. The great architectural revolutions of the past in Europe, Romanesque, Gothic, Renaissance, Baroque, were all successive waves in the stream of a continuous life. The nineteenth century was largely occupied in the laborious and disagreeable task of the resurrection-man and, by way of filling up the time, in manufacturing corpses.

Some theorists believe, or at least assert, that in the evolution of civilisation, the family will cease to exist; which implies that the house as a home will cease to function, and all existing domestic architecture become derelict. Architecture will concern itself solely with public or communal buildings. In these, as in the human beings who will use them, the aim will be to eliminate individuality so as to produce a

dead level of the highest possible average efficiency; a phrase in which "the highest possible" is pretty nearly equivalent to "the lowest tolerable." The life will resemble that of ants or bees, and the housing resemble a beehive or an anthill. Such an inverted Utopia may or may not come into existence, but the movements in that direction are of the highest interest.

The problem of overcrowding with which architects have now to deal is no new thing. A similar sort of conditions arises in all densely-populated cities; it probably did in Nineveh and Babylon, it certainly did in Imperial Rome. Family life there was difficult; those who wanted it in any full measure had to go elsewhere for it. The urban population was crowded into blocks eight or ten storeys high, providing little more than cubicles or dormitories. A maximum height of 68 feet was enacted, but whether the rule was enforced strictly is doubtful. Water was apparently never laid on, if laid on at all, beyond the first floor; lighting and ventilation were left to look after themselves. What relieved the congestion was the steady depopulation of the city.

The earlier attempts of the nineteenth century at slum-clearance did not come to much more than replacing one set of slums by another which was more sanitary, and here and there, where space was restricted, making the new slums vertical instead of horizontal. From the endless rows of mean streets varied by the blocks of so-called "dwellings" with their equally paralysing inner monotony, it is a long step to having made mass-housing organic. The Karl Marx Hof, at Vienna—I only know it from plans and photographs, and neither plans nor photographs tell much, to the layman at least, of what may be called the value of a building—with its communised provision in a single structural framework for a population of 5,000 souls, is an essay in what is in effect a new architecture. Mass-production in industry carries logically with it mass-housing for the machine-workers as well as for the machines. If the kind of civilisation which it involves is accepted as desirable, it is not beyond the power of architecture to create for it a new tradition in which there shall be both dignity and beauty. Mass-housing has to be humanised. This ideal is being felt or groped after through trial and error. If for every experiment that succeeds there are twenty that fail, we may reflect that in horticulture, if 5 per cent. of the blossoms develop fruit, the crop is a full crop. What it comes to is this: all experiment is erratic which is not rooted in tradition; all tradition is barren which does not embody itself in experiment. The continuity of art is fundamental. The evolution of art is perpetual.





"Mass production in industry carries logically with it mass housing for the machine workers as well as the machines"

THE KARL MARX HOF, VIENNA

Modern architecture, whatever its faults, does not lack courage; a courage that may carry it through its temporary aberrations and extravagances. Fashion and the revolt against fashion tend to cancel one another out. The stability of civilisation depends, not on the clever people who exult over its failures, not on the stupid people who are content to muddle along, but on the common sense of mankind. Anarchy destroys, but cannot create, and so carries in it the seeds of its own destruction. Eccentricities are short-lived, for they build on quicksands.

May I be allowed to return once more to first principles and to basic doctrine? That doctrine as it applies to art was laid down in six words by Aristotle. He was speaking primarily of the art of poetry; but what is true of poetry as art is true of art in any of its embodiments; *les arts sont frères*. His words, alike simple and profound, are: Rightness consists in largeness and order.

What the final judgment on any work of architecture turns on is whether or not it is right. Rightness cannot be defined or reduced to rules, it can only

be felt. It is not a collection of facts, but a quality; and its quality is that it satisfies. In judging any work of architecture, the question is not whether it is in one style or another, whether it is classical or romantic, whether it is in brick or stone or concrete or wood or steel. In all styles and methods and at all periods when art has been fully alive and the artist has had scope to exercise it, there are examples of this rightness having been achieved. The Parthenon and the Pantheon, Agia Sophia and Notre Dame d'Amiens, Morden College and the Radcliffe Camera, are all of them right, one not more right than another. There are buildings, the work of architects now living, which give this same satisfaction. To say that the machine has conquered its maker is a mere figure of speech; the machine only does what it is made to do.

Largeness, amplitude, is not a matter of size. It is as manifest and as vital in the smallest and simplest as in the biggest buildings. Its presence or its absence is what gives the quality of a cottage or a barn or a village street just as much as of a palace or a



cathedral or a city. The architect, in planning and executing all these things, has to exercise the same qualities of intelligence and imagination; has to project into his work the same instinct. His work will, in either case, be ignoble only if he fails to make it noble.

So likewise order, proportion, is not a matter of measurements or mathematical formulæ. It is too subtle to be reduced to rule and set as a copy; it is the highest type of vitality. It might be called the projection of melodiousness into the structure. A picture, a great painter once said to me, ought to sing: the same applies here. Some sense of this is at the root of the legends of temples and palaces and cities built to music, or even, in a more daring flight of imagination, built by music. According to the magnitude of the work the melodies become more richly harmonised and more fully orchestrated. More science is applied to the art; but it is the same art.

Rules of proportion are merely generalisations and abstractions drawn, interestingly enough, from examination and measurement of actual works of art. The sense of proportion is potentially innate. To become effective it must be educated, must be fed into a trained instinct. The education required for this purpose is that of the architect himself, of the artificers who work under him, and much more widely, of the whole community. The architect is helpless if his workmen cannot do what he means them to do; he is hardly less helpless if his employers, whether individuals or communities, force him to do what he does not mean. The education of the public, of the massed millions of laymen who secrete the product called public opinion, is too large to touch upon; but I think we may say that it is making sensible progress. The education of the artificer is, I believe, becoming more and more effectively organised. Yet it was not without some alarm that I

recently read in the *JOURNAL* of the Institute a recommendation of the use of sawn and not riven laths for keying plaster upon, on the ground that the spacing of riven laths is more dependent on intelligent workmanship: as though unintelligent workmanship were a thing to be not merely accepted but encouraged. Unskilled labour is only the raw material, or the regrettable residuum, in a fully civilised commonwealth; there is no labour which may not be highly skilled.

And as to the architect himself: With the increasing complexity of modern requirements and of the machinery for meeting them, his professional training becomes more and more complicated. He has to be trained not only in the art of building, but in all the applied sciences that bear upon it: chemistry, metallurgy, hydrostatics, acoustics, lighting, heating, ventilating, for in all these subjects and many others, his work is constantly bringing him up against problems that have to be dealt with, mistakes that have to be remedied, difficulties that have to be surmounted. It is more than ever necessary that this superstructure shall be based upon a large and liberal education, the education that shall have taught him how to learn, shall have made him know the difference between knowledge and half-knowledge, shall have fed (the word *education* means *feeding*) his intelligence and his imagination, shall have made him acquainted with tradition and equipped for experiment. Architecture is human; and the architect must be grounded in humanism.

There is in the sisterhood of the Muses no Muse who has architecture for her express province, as Clio is the Muse of History and Urania of Astronomy. But in one list of those guardian-goddesses there is a Muse named Polymatheia. Her sphere, and no less sphere than hers, is that of the mistress-art of architecture.



## Vote of Thanks and Discussion

The PRESIDENT then called upon Mr. Cecil Lubbock to propose a vote of thanks to Professor Mackail.

MR. CECIL LUBBOCK: Mr. President, ladies and gentlemen,—You have done me the very great honour of asking me to move a vote of thanks to Professor Mackail for the address which we have just listened to. In the presence of such a Society and such a lecturer, I should have conceived it more fitting that I should have remained in humble silence. But even in these high altitudes perhaps the disciple has his place no less than the critic. And if my task is that of expressing gratitude to Professor Mackail, it is one that I should find no difficulty in accomplishing, for there is no one who has done so much as he has to stimulate the education of my later life: and I am deeply grateful to him and have long felt that I am in his debt. The spark which he helps me to kindle into flame is a love of the Latin and Greek Classics, and I can assure him that I am not the only member of his audience who is able to say this of him. I sometimes think that the power of the architect over our material surroundings is almost too great and too absolute. A picture, if we dislike it, can always be consigned to the coal-cellar; a piece of music simply need not be played; but a great building is not to be disposed of so easily. Whether or not it satisfies the spiritual aspirations of succeeding generations, where it is, there it remains. What is the layman to say to the Architect? Has he any say at all? I am aware, from experience, that a great architect may be willing to listen kindly, patiently, attentively, to the doubts and perplexities of his lay client, but I know equally well by experience that the lay client often leaves the conversation painfully conscious of his ignorance, and of his entire incapacity to form any judgment on the question at issue. Professor Mackail has told us that our judgment on a work of architecture turns on the question whether or not it is right. But that is the question. How are we to tell what is right and what is not? The Greek philosopher—and I make no apology for referring to this in Professor Mackail's presence—when he wished to form an estimate of the higher values often had to conclude that the only thing he could do was to leave the matter to the verdict of the *Phronimos*, who, I like to think, was not the expert, but the level-headed, thoughtful, instructed layman. Rightness, said Professor Mackail, must be felt; and if so, it can only be felt by those who are capable of feeling it. It may, perhaps, be said that a nation gets the architecture it deserves, and, therefore, it is important that the mind and spirit of all laymen should be so trained and instructed as to recognise and to love the highest when they see it. In this, as in so many other regions, Professor Mackail has given us the pattern of a method, which all his weaker lay brothers may well strive to follow. I therefore have great pleasure in fulfilling the wish of the

Council of this Institute and proposing that the thanks of his audience be given to Professor Mackail for his lecture, for the charm with which he has surrounded his subject, and for the pleasure which, I am sure, it has given to us all.

MR. A. B. KNAPP-FISHER [F.] (President of the Architectural Association): Mr. President, ladies and gentlemen,—In seconding this vote of thanks, I would like to say that I think we ought to be specially grateful to Professor Mackail and to those other laymen who talk to us from time to time on the question of architecture. As Ruskin said, architecture is an art for all men to learn, because all are concerned with it. Note the word "learn," a point which Professor Mackail stressed. Architecture is not a question of arbitrary suppositions regarding sensibility and fancy only, but something which entails sound knowledge and wide education. We are, therefore, greatly indebted to Professor Mackail, who has given us to-night of his learning and knowledge on this, to us, vital subject. Many of us—I am sure—would be sorry to address the British Medical Association, or the Law Society on their respective professions. We have had so many outpourings from laymen recently that perhaps you will forgive me if I repeat what I said the other night in another place, when I told the story of the schoolboy's howler, who wrote that "Rome was destroyed by an overflow of saliva from the Vatican." If we are not careful we shall have laymen setting themselves up as residents of little Vaticans, and we shall run the risk of being destroyed, as Rome was.

Professor Mackail's address has been, I think, Sir, very good for us, because on one or two of these laymen's evenings there has been a tendency to encourage a too definite support of, or opposition to, some one particular style, such as a building which is strictly modern or, on the other hand, something which is more traditional. I think that has been a mistake, and that it is always wrong to range oneself too definitely on one side to the total exclusion of the other.

Professor Mackail has given us to-night a most delightful historic sketch throughout the ages, embodying all kinds and conditions of work and style. Art is one; but artists and their manners are many. That I think we must recognise. Our work depends very largely on such considerations as site, client, cost, object in view, etc. Every building presents, of course, a separate problem of construction and design arising out of the needs and means of the moment. In other words, we should not try to make the crime fit the punishment—I will put it in that way. And we ought not to think in watertight compartments. I mention this because I think it arises out of certain addresses which we have had from laymen recently in which there is seen this tendency to side with, or be opposed to, some particular architectural style.

I will only add, on your behalf, my very sincere thanks to Professor Mackail for his profound and interesting

address, and if I have hesitated in my seconding of this vote of thanks, it is because I am still under the spell of his eloquence, and also the eloquence of the proposer of this vote.

Professor BERESFORD PITE [F.]: The main thought of the majority of Professor Mackail's audience must be what architects thought of this highly specialised layman. It seems—and one is in this matter entirely subjective—that the intuition which produces fine architecture is incapable of definition; one does not know how it is, but it comes. A friend of mine who lectures at Cambridge on the theory of art, an experienced psychologist, said, "My dear fellow, don't worry yourself about it; you have got to do it, not think about it." And when we come to read this charmingly expressed, scholarly review of the outlook of a philosophical poet upon architecture, I don't know that we, as practising architects, will get "any forrader." This must not be allowed to sound ungracious, Sir, because we have had an evening of special enjoyment and delight; but from the strictly practical point of view Professor Mackail will agree that the architect is ultimately cast back upon himself and upon what constitutes himself in his effort to apply any of the definitions which have been so interestingly suggested to us: that largeness—which one may translate into breadth of treatment—that sense of proportion which it is impossible to conceive of without some standard. That the mediæval architects attained fine proportions we will confess, but I submit that they were entirely unconscious in their operation. And it presents a difficulty at once if you try to create a proportion without some standard. Lethaby once remarked that a door was of good proportion when it was 7 feet high and 3 feet 6 inches wide, because men walked through it, but if men entered buildings on all fours the standard of proportion would then be reversed, which is an amusingly obvious truism.

Passing from this, it is rather difficult to attempt to discern in Dr. Mackail's paper some practical motive for the designing architect with his daily problems. Dr. Mackail need not be afraid of the nature of the problems on which we are engaged at the present moment. The whole profession is at this moment engaged in designing a temple of architecture, so that our minds have got far beyond the County Council ten-shillings-a-week cottage, and we are not thinking in terms of a factory used as a Government office at Acton; the profession is foaming with inspiration for the designing of a new building for the Mistress Art, the great art of architecture.

The inspiration of this evening is of vital interest to the profession; Dr. Mackail's thoughts have put us into his alembic, we are not struggling with slums at present, we are in a higher atmosphere, and it is while there that we are attempting to digest the philosophy contained in the paper of the evening.

If I may descend from this random dissertation to the paper itself, I do not know how we could fit into this delightful review of the development of architecture the

Renaissance, which was no constructive movement, which did not hinge upon any advance in the constructive or the material elements of architecture, but was purely an imposition, a mental imposition *ab extra*, derived from a romantic classicism, embodied in such a character as Alberti and infecting subsequent generations. And this desire to be classical, to be romantically classical, in the modern world has given us the Renaissance. That has given us St. Peter's at Rome and St. Paul's in London. And if we strip the great works of Rennie of this superfluous classical sweetness—it is a little difficult to do it—where are we? How are we to place this external classical influence into that continuous stream of development which Dr. Mackail has so effectively described? If we accept the result, why not accept the Gothic Revival in the same way? We are living too near it to judge it. No effective critic of Gothic Revival has yet arisen; but I venture to suggest that such a group composition as the Houses of Parliament, with which, happily, we can acquaint ourselves any day we like, in London, is a gift to art and to the world of architecture of which any generation might be proud, and which cannot be dismissed as a mere eccentricity of a romantic movement. It is not like a thing which comes and then is gone. And into that movement, or, rather, in connection with that movement, there has been a reversal of the whole process of architectural thought which we can scarcely yet estimate, as we are not free of it, and I do not know that we want to be. What is wanted is a searching and just criticism of the whole movement of the nineteenth century, of which the Gothic Revival is the outstanding peak, and I think we are too near to it to come within that.

Let me conclude by venturing to add to the expressions of thanks which have already been given to Dr. Mackail for the most charming, interesting and intellectual treat which he has given us this evening.

Mr. THEODORE FYFE [F.]: I cannot do more than endorse what has been said already. I have enjoyed very much Professor Mackail's extraordinarily able exposition of historic architecture in particular. This may sound somewhat rude, but I did not think it was possible for a layman to express so accurately the whole meaning of architectural development in the historic styles. In particular his account of the Babylonian and Mesopotamian times was extraordinarily good, and that was, to me, the most thrilling part. I think it is a very good thing to bring before students a comparison between the most ancient style of architecture and the most modern. He is right in saying that the tiled veneer of the Mesopotamian ziggurat which aimed to go up to the sky can only be paralleled by the modern sky-scraper.

The whole lecture has been extraordinarily interesting, and I feel sure Dr. Mackail will say something, in his reply, to Professor Beresford Pite's provocative remarks about the Renaissance.

I express my hearty appreciation of the paper, and my warm thanks to Dr. Mackail for it.

Mr. C. RODEN BUXTON: It is a terrible shock to find myself called upon by you, Sir, to speak; I thought my part was to listen and learn. I come as a humble politician who is an enthusiast for architecture, but who is not grounded in the subject. Perhaps the only thing I could do, which would be of any interest or use, would be to lay before you, this expert audience, some of my untutored tastes and feelings and loves.

I have deeply enjoyed the Lecture, and I have been thrilled and stimulated by it. I have enjoyed everything that I have been able to learn about architecture, however diverse the sources. I was originally "enthused," as probably many of us were, by Ruskin. I have been "counter-enthused" by Geoffrey Scott, telling me about Baroque, and the architecture of humanism. What I have heard here has enthused me again, the net result being that architecture seems to me, as an outsider, an absolutely inexhaustible source of delight, from whatever point of view it may be approached. In my walks I go round Westminster, and at one moment I am delighted with one thing, and at another moment with another; I must have tastes which, I suppose, according to many theorists, are inconsistent with each other. But I enjoy them all. I have stood for many minutes wrapt in admiration, and fixed to the pavement, gazing upon the new Underground Station at St. James's Park; I draw intense delight from looking at that building. Then I go and look at the Houses of Parliament, and I find there that, although I gained great delight from looking at them ten years ago, I derive less pleasure from the building now. I do not think it would make very much difference to my pleasure in looking at it if it were half as long again, or twice as long, or only half the length. It is rather like a Globe-Wernicke bookcase; you can add another foot or two at the top, or at the side, as you please. But when I get to the river bank, and gaze across at the new County Hall, I feel myself thrilled with a sense of a wonderful unity. I am bound to confess that I derive now vastly greater pleasure from looking at the County Hall, than I do from looking at the Houses of Parliament. Then I walk along the Embankment and I gaze, wrapt and transfixed, at the Bush Building in the middle of Aldwych. I see there are differences of idea and of aim, but I can honestly say that all these buildings give me intense pleasure. And if I go down Victoria Street—and I shall close my eyes in doing so, after hearing Dr. Mackail's reference to Victoria Street—when I get round some corner and, as far as is possible, gaze on Westminster Cathedral, which is hardly visible from any point of view, I am thrilled with yet another enthusiasm. I am taken back to the Byzantine world. I am only sorry Dr. Mackail did not devote more attention to the infinite variety of the Byzantine architecture. I am not sure that Westminster Cathedral does not give me the greatest pleasure of all—or rather it *would* give me that pleasure if I were able to see it. I hope that some day there may be another Fire of London which will clear the site around the Cathedral, and will enable one to get some

sort of conception of that marvellous work. One small suggestion I would make is this. Anyone who admires the campanile of Westminster Cathedral would do well to get as far off as he can, in order to be able to see something of it; and the best place that I have discovered, so far, for that purpose is the corner of Green Park by the Ritz Hotel. I do not know whether anybody else's experience corresponds with mine, but I have sought, carefully and with tears, the place from which I could see more of it than anywhere else. That is the spot which I have found the best; and it is one of the most beautiful things in all London, to see that tower from that particular corner.

I am simply laying my pleasures and experiences before you as raw material, and I should think there are many laymen who, like myself, admire qualities which many theorists would consider incompatible with one another.

There is one other thing I would like to refer to in conclusion; it is a problem, and I would be very glad if anyone would solve it for me: How is it that builders of the past, with apparently such taste and such a sense of values, should have so often planted down some building where it completely spoils the view of some more ancient building? Why, for instance, did they plant St. Margaret's Church, Westminster, in front of the Abbey? There may be a simple answer to it, but I don't know it. Personally I should like to see St. Margaret's, Westminster, blown up. I have never been able to see the Abbey properly; nobody ever has, unless it be the aeronauts circling above it. And, what is perhaps even worse, the church which has been planted down opposite the great Tudor gateway of Lambeth Palace, or rather up against it, almost touching it, completely spoils, to me at least, the whole proportions of the Palace. Those who built the church were, I suppose, people with great taste and knowledge; why did they stick it against that gateway? I think the present church is a later construction. I would like to see that blown up too. It would be interesting to me to hear any explanation which any of you can give.

Mr. WALTER LAMB, M.V.O. (Secretary, Royal Academy of Arts): Mr. President, ladies and gentlemen,—I am not here as an expert in architecture, I am simply here as a guest who has been courteously invited by the President and Council. I have listened with very great interest to this paper of Professor Mackail, and to the remarks which have been made after it. I would simply like to say how interested I am in the whole subject.

With regard to the remarks which Mr. Buxton has just made, it seems to me he is the ideal layman; he seems to go about enjoying everything with an extraordinary interest and eagerness, and is "enthused" by all styles; and even if he cannot see buildings he is enthusiastic about them. I think we should all aim at that ideal of his. And he has a touch of idealism which goes even further than one might expect in the ideal layman, in that when his enthusiasm is a little lacking he says—"Let us blow it up!"



The PRESIDENT then put the vote of thanks to the meeting, which was carried by acclamation.

Professor MACKAIL (in reply): I only wish to thank you very cordially for the patience with which you have listened to my discourse, and for the kindness with which it has been commented upon by those who have taken part in the discussion. I will not attempt, at this hour of the evening, nor would I attempt at any time, to enter into the deep controversies which would arise by a discussion of what Professor Beresford Pite said about Renaissance architecture. Whether or not it be that Renaissance introduced no principle into architecture, it introduced new architecture, one of the greatest in the

world. That is a statement of fact which would have to be considered. But it is much too large a subject to enter upon.

And I would mention a much smaller point. I think the best view of the tower of Westminster Cathedral is not that mentioned by Mr. Buxton, but that obtained from the top of a bus going down Park Lane. I am very glad we have had the views on the whole subject of one or two ideal laymen. I am not an ideal layman, but I could not, without much discomfort, entertain the idea of blowing up the greater part of the buildings of this country.

The ordinary meeting then terminated.



THE RADCLIFFE CAMERA, OXFORD



## The Problem of Originality\*

BY R. E. STRADLING, M.C., D.Sc., Ph.D., M.INST.C.E. [HON. A.].

*"To tradition is assigned the function of preserving and handing on all that is permanently valuable in originality; while the constant purpose of originality is to enliven and enrich the tradition which has been inherited."*

(DR. RAYMOND UNWIN, 7 November 1931)

THOSE of us who are privileged to claim Dr. Unwin as friend have learned to expect a clarified and philosophical statement whenever he summarises a position. But in the quotation given above, from the Presidential address to the Royal Institute of British Architects in November last, Dr. Unwin has surpassed even his usual brilliant clarity and expressed himself in a sentence so full of meaning and so appropriate at the present time as to be nothing less than a stroke of genius. It seems to the writer to be the statement of a truth of much wider application than that to which Dr. Unwin was referring, and especially worthy of close consideration from those interested in the scientific development of the building industry.

In all ages man must have been faced with the problem of absorbing into his tradition the results of original thinking or flashes of inspiration; the problem becomes peculiarly intense in the present age when new scientific methods are so much to the fore. Man's adjustment to Nature, which is summarised in tradition, has in the past been brought about by slow "trial and error" methods, whereas modern scientific method now offers the possibility of more speedy and calculated adaptation to meet all demands.

For the sake of completeness it is worth while to recall once more what this method of trial and error of the past really means, and to contrast it with the facilities now at our disposal in the scientific method. Perhaps no industry possesses a greater wealth of tradition than building. Both as an art and also as applied science our building traditions have probably advanced by intuitive steps. In building we are concerned with taking advantage of certain natural laws to bring about a desired end involving conceptions of beauty as well as utility. Throughout our lives we are faced with the necessity of adjusting our activities to the forces of Nature surrounding us. If we are able to work in harmony with these forces we are successful. In the past, the difficulty has been that the information about Nature's laws had of necessity to be expressed in terms of practical experience, and this meant that the applicability of the resulting

practical solution depended upon a certain combination of natural forces all acting at the same time. Thus, this answer only gave the true solution to the practical difficulty if the circumstances recurred in their entirety each time the answer was used.

To revert to the words of Dr. Unwin, it is originality which has disturbed the steady flow of tradition. At all times in which progress is being made original conceptions are emerging, and the problem is thus always present of how tradition is to assimilate the new conception. The attempt to absorb new ideas into practice must always lead to difficulties unless the new idea is interpretable in terms of knowledge of the facts.

But traditional knowledge usually becomes expressed in rules of practice, without any more support than the fact that in the majority of cases, if the rules are followed, reasonable success is assured; there is no knowledge included which enables the practitioner to judge whether a slight variation of the rule of practice is likely to give success or failure. Such a condition of affairs always leads to the introduction of "quack remedies." All those in the building industry are aware of the vast accumulation of "patent medicines" available for their work, and how in the absence of other knowledge than that given by tradition it is practically impossible to forecast the results to be obtained by their employment.

With the development of modern scientific method, means have been found of examining the forces of Nature in such a way as to get some measurement of how each factor in a problem affects the final result, and in this way the answer obtained is a quantitative one, and capable of adjustment when the individual factors involved vary somewhat from place to place. Such a method of collecting knowledge about Nature is what we mean by scientific research. It is the attempt in the laboratory to isolate each factor involved in a problem and so to produce an answer to a practical requirement which shall in itself be capable of adjustment when the conditions of application change. To return again to Dr. Unwin's sentence, scientific research is the modern means available for enabling originality "to enliven and enrich the tradition which has been inherited." But a difficulty arises. It is illustrated by an example from elementary arithmetic. One cannot add  $\frac{1}{2}$  to  $\frac{1}{3}$  directly

\* An address delivered to the Manchester Society of Architects on 10 February 1932.

but the sum is easily done if both are brought to the same "common denominator" and expressed as sixths. The tradition of the building industry is not founded on scientific method, and so before originality, adjusted by scientific method, can be used in conjunction with tradition, the tradition itself needs to be analysed by the new method and thus brought to the same denominator. To re-state this in other words, two major divisions of the problem of development of the building industry are seen to emerge; (1) the judgment and adjustment of new ideas to make them truly serviceable in building, and (2) the expression of the traditional knowledge in terms of modern science, so that the new ideas can be welded in, to make a "modern tradition."

One or two examples may make this clearer, and the problem of the wall has been taken as typical.

### THE WALL

Walls constructed in accordance with the traditional methods of the building industry are very thick, and although it has not been realised sufficiently clearly until recent years, there was a very real reason for this. Leaving aside such requirements as those of fortifications, the chief work demanded from a wall is protection from the weather, and this is, of course, particularly true in such a variable climate as that of Great Britain.

The thick wall was an answer arrived at by trial and error at a time when civilisation was not in its present state of development. This answer is obviously not an economic one at the present time, when the cost of labour is a much larger factor in both the making and using of building materials.

The constructional engineer has developed from the building industry, but his training at present emphasises the importance of strength and the economic employment of materials from this point of view. It is not surprising that the engineer's reaction, at a time when speedy and economic building was a national urgency, was to emphasise the absurdity of the traditional thick walls when looked at from the standpoint of one primarily interested in strength. Traditional walls are often unnecessarily strong. Thus the building industry, with the added impetus from the only science they had, engineering, tried to develop lighter walls, viewing them largely as load-carrying constructions and not realising that this was not their major function. Troubles followed, until at the present time it is not easy to see the best way of making the average modern house completely weather-proof.

It is of interest to examine one or two cases of the kind of troubles which arise. Three main types of walls are traditional (a) the heavy masonry wall with the outside surface in dressed stone or a special facing brick, (b) a heavy, roughly built wall plastered on the outside with lime stucco (or plaster), (c) a framed structure of timber filled in between with a thick packing (*e.g.*, wattle and daub). It is instructive to compare these with the modern replacements. The solid wall is attempted usually in

brickwork with a facing brick on the outside. The thickness is often only 9 inches, and for this thickness, as well as others considerably greater, serious trouble is experienced from weather penetration. The second, plastered type, is represented by the modern wall built of common brick and rendered on the outside usually with Portland cement mortar. Here, the brickwork is intentionally made thin, and the weather protection is dependent upon the outer, plastered surface. The third is the modern framed building of steel or reinforced concrete with panels which may even be glass.

In (a) and (b) not only is a variation of the tradition made in the thickness of the wall, but also in the type of mortar used. In the majority of cases this is Portland cement mortar, and, as previously mentioned, the stucco is also of Portland cement. Incidentally here again, in the Portland cement we have an engineering development. The engineer has demanded a stronger and stronger cementing material, and so the manufacture has developed from what was originally a hydraulic lime into a more or less controlled product in the modern cement. This material is very strong compared with the traditional lime, and by being so strong causes trouble in building work. One further point which needs emphasising in connection with this cement is the presence of alkalis introduced from the raw materials used in the manufacture.

The using of a new cementing material in conjunction with bricks and stone brings in its train a fresh set of troubles quite apart from the lack of weather resistance due to the cutting down of the thickness of the walls. No building can be considered an elastic whole. It is under movement the whole time from minor settlements and the like, and in the traditional work it is largely taken up by adjustments between the small units of the wall and the soft lime mortar between. Now the strong cement mortar prevents to a large extent these small movements, and the result is a major crack when the internal stresses become sufficiently high. A similar thing occurs with the plastered finish on the outside. When this was made of lime mortar adjustments could take place without large cracks ensuing. With the modern cements, not only does a network of cracks form owing to shrinkage movements but major cracking due to movements of the whole building is usually found. Then an interaction very often takes place between the salts in the brick and the salts in the cement rendering, bringing about serious failure.

This interaction between cements and bricks is shown often in the first (solid) type of wall without the cement rendering or plaster. It appears in this case as a white efflorescence which is usually disfiguring and sometimes disastrous.

A traditional wall of lime and stone or brick appears to have a closer relationship between its constituent parts than is at first realised. The first signs of decay on some of our older buildings is a disintegration of the mortar joints. With the best of intentions, the repairers

sometimes replace this lime mortar by one of Portland cement, having in mind the idea of putting in a stronger mortar as the previous one has failed. The common result of this is the decay of the stone or brick. In some way the old lime mortar acted as a kind of "safety valve" for the escape of such salts as were in the wall and were conveyed to the surface as moisture dried out. The relative properties of the lime and the stone or the lime and the brick were such that these salts crystallised in the mortar and destroyed it. The dense Portland cement mortar resisted this action, with the result that the stone or brick suffered decay. It is not possible in a building to prevent the ingress and egress of water or the transmission of salts always present in building materials. The problem of the scientific man at the present time is to analyse the conditions existing in walls so that the available materials can be utilised correctly.

Or, in other words, the problem is to understand the tradition so that the new ideas can be assimilated.

It may be of interest in passing to attempt a summary of some of the problems thus involved as viewed from the standpoint of the building research worker. They are as follows:—

(1) What are the real requirements demanded of a wall?

(2) How does water move in a wall?

What are the deciding factors as to whether a wall is wet or dry on the inside?

(3) When water moves in a wall under changing humidity conditions, in what way are the salts, always present in building materials, conveyed from point to point?

Why should they crystallise sometimes below and sometimes on the surface?

(4) Why is the use of the traditional lime so often free from troubles which may arise with Portland cements?

(5) How can a mortar be designed to suit a specific stone or brick?

(6) How can cements of the Portland type be produced free of alkalies?

Space does not allow of detailed consideration of the third type of wall (c), although an interesting case is provided of "modern" tradition in urgent need of readjustment. It has been discussed elsewhere.\*

### THE DEVELOPMENT OF THE INDUSTRY

The foregoing examples indicate the kind of difficulty now facing our traditional industry.

The traditional knowledge is apparently failing to give the required result, though it is probable in some cases that it is not actually a failure of the tradition itself as much as a failure to carry out fully the tenets of the tradition.

For many generations the materials of construction

\*First Report of the Steel Structures Research Committee (pp. 6-13).

used in building were almost entirely timber, stone, brick and lime. Building knowledge was based upon these as they existed years ago. At the present time such materials are prepared and marketed under the same names as in the past, but in the absence of strict definition this has not ensured that the same materials are supplied. Thus right at the start of any consideration of the tradition we find how impossible it is to follow it rigidly, for our original materials in many cases do not exist. In addition new materials and processes are offered, and in the absence of scientific knowledge the industry can only test them by trial on the full scale. Further, new conditions of exposure are placed upon the structures not only in speeding up work but by changes in the mode of utilising the building such as central heating, for example, which has brought a number of difficulties, from joinery shrinkage to plaster cracking.

Thus the process of development can be summarised as before as (1) understanding our tradition, (2) examining new suggestions and fitting them into the tradition.

The practical problem is how to arrange that this can be done, and then how to ensure that the new information thus obtained be adopted by the industry.

The Building Research Station has been set up to help in this development work; it cannot do it alone. Whenever the scientific worker is asked to assist by applying his science to industrial problems, it is worse than useless to shut him up in a laboratory to work alone. It is essential, for success in any reasonable time, that the scientific knowledge of the laboratory worker and the knowledge of the practitioner be pooled in a co-operative effort. Each has to learn something of the other's language and outlook.

Scientific knowledge to be of service in the everyday life of such an industry as building, must be summarised as far as possible in working rules, for this is what is usually meant by traditional knowledge. An example will make this clear. Anyone engaged continuously upon structural calculations will soon reduce mathematical formulæ to simple forms which he can apply quickly and easily. He has not the time to go back each time and deduce the formulæ from first principles, but if he has received a proper training, he will realise the limits within which a particular formula is applicable and also the influence and meaning of each term in it.

This is the kind of working rule science is likely to produce for the building industry. The rules will not all be mathematical, but for their application some knowledge of the basic science underlying their formation will be necessary if they are not going to be as blindly applied as is the present type of traditional knowledge.

It is of interest to consider some of the points raised previously in the discussion of the wall. The problem of efflorescence on and decay of brickwork was seen to be due partly to the mortar and partly to the brick, and that for sound construction it is necessary to design the mortar for use with a particular brick. Standard Specifications can be drawn up for materials, but unless

the underlying principles of the clauses be realised and the adjustment made when associating certain materials trouble is bound to arise, never mind how perfect the specifications are themselves. Again, the modern cheap construction of building thin, solid brick walls and relying upon a cement rendering to give weatherproof properties is leading to endless trouble. Such construction is not traditional, though thought to be so by so many. The conditions of stucco work must be understood. However perfect a cement specification may be in defining a first-class material from certain aspects, it is useless to expect success if it is wrongly applied.

Thus the position is reached that traditional building construction is not possible now—whether we like it or not, the methods of our forefathers cannot be carried out. We have neither the materials nor the time, and quite fresh demands are being made which were not allowed for in the traditional forms. The modern method of development is by the application of scientific knowledge, and the State has set up the Building Research Station to provide the facilities for carrying out the research work necessary. But the Station cannot work alone: co-operation with the men of practical experience is essential for success. In addition, it is not the work of the Station to carry out the general scientific education necessary if the modern method of expressing tradition is going to be used. This modern method presupposes that we are in a scientific age. Is the building industry going to keep its eyes shut to this fact? The mere fact that the Building Research Station is a *State* research establishment means that the Government realised and realises that building is an overhead charge on the whole of our national life. The capital locked up in building is enormous, and in many cases the necessary development of other industries is held up because of the prohibitive cost of scrapping existing buildings and making a fresh layout. Research is wanted not only in materials and processes but also in the actual organisation of work. All those in the industry who think seriously of their profession realise how enormous is the waste which under present conditions is almost, if not quite, unavoidable. And this waste has to be paid for by the nation in some way.

Perhaps no thinking man will deny the necessity for research. He may not realise, however, how ineffective this may be if a receptive audience is not provided by suitable education in the industry.

#### EDUCATION FOR THE BUILDING INDUSTRY

The industry can be considered in two main groups for the purposes of education:—

- (a) Designers and organisers.
- (b) Craftsmen.

In the present discussion only group (a) will be examined in detail. The second group (b) is comparatively well catered for at present by our technical schools. As the scientific outlook becomes traditional in building

so the training of the craftsmen will have to be adjusted, but it is in group (a) that the training problem is so urgent.

The normal individual responsibilities of architect, structural engineer and contractor during the erection of a modern building are fairly clearly defined and understood. Briefly stated, the architect, in addition to planning and aesthetic design, is required to decide upon the form and details of construction (except where a specialist is co-opted to relieve him of some of this burden), the choice and suitability of materials, and, up to a point, the method of using the materials; he is also required to exercise reasonable supervision throughout the progress of the work. Generally, perhaps, the architect, specialist, and contractor work in the friendliest co-operation with a common aim—the production of a “good job.” But troubles and failures have a “habit” of cropping up on building work. They may be due to poor materials, poor workmanship, unsound design or wrong specification; and in a few cases perhaps to a combination of circumstances beyond the control of anyone. When such troubles arise the architect must of necessity ask himself whether his design and specification can be absolved from all blame. It must be remembered, too, that precedent freedom from failure is not necessarily absolution. The writer has the temerity to suggest that the architect will sometimes come to the conclusion that the failure is his own responsibility. His problem then is to prevent a repetition on some future job, and it seems certain that he will find it extremely difficult, in many kinds of typical failure which can be called to mind, unless he has appreciated the significance of the results of certain recent scientific investigations. An example is brought to mind by the recent bulletin\* on the pattern staining of ceilings. When such staining occurs it is definitely due to lack of sufficient heat insulation in the ceiling construction, and thus probably a design failure.

At the serious risk of severe criticism, the writer will attempt to express his point of view on the educational needs of the architect, builder, and engineer. He realises his own training as an engineer imposes difficulties in his appreciation of the other two groups, especially perhaps that of the architect, for he admits his lack of power of appreciating fully the aesthetic view.

*The Architect.*—It seems likely that in most cases entrance to the architectural profession is due to the promptings of the artist in a man. He turns to the “Mother of the Arts,” rather than to Painting or Sculpture, because he feels, perhaps, that it provides a little safer passage through life. In architecture, through its direct connection with and application to material things, he will at least acquire supplementary knowledge which provides a means of existence until he makes good; with Painting or Sculpture he may starve before he can achieve success. Whilst, therefore, the student-architect in general naturally absorbs instruction which

\*Building Research Bulletin No. 10. The Prevention of the Pattern Staining of Plasters.



is intended to develop his artistry, he is liable to regard as onerous much instruction which is equally necessary if he is to perform satisfactorily all the functions of "Master Builder" (employing the term in the original sense). Here seems to lie the difficulty in architectural education, but it is one which must be met if the architect is to keep a hold on his responsibilities in modern times. Without hindering his artistic development it is necessary to be more insistent than in the past in getting home to the student early in his career the *full* significance of his ultimate responsibilities. Nothing will help him more in this than the acquirement of a scientific (or, if you like, rational) outlook. This does not necessarily mean that he must be made into what could only be an indifferent scientist, but he should be educated to ready appreciation and assimilation of the results of scientific investigation. The only way of accomplishing this appears to lie in including applied science in his curriculum up to a much later state in his training than is done at present.

One realises how real must be the desire of those controlling the training of architects to produce men for the profession who cannot perpetrate some of the horrors now seen as buildings. The insistence on the artistic development is sincerely appreciated, but what is to be the final result if equal attention is not paid to the revolutions that are in progress in both materials and processes which are the media in which the artist architect has to work?

The reply given so often to such expressions of opinion is that, though the argument may be to some extent true, the present courses of training are so full that there is no room for anything more. This is really no reply, for it is a replacement of some sections and reorientation of others which is necessary rather than a lengthening of the course. Even in design this is true. Why should buildings be designed which are wrong acoustically? Information exists, a great deal of it in the R.I.B.A. JOURNAL, which if it did not produce perfection; yet how many architects think first of the requirements of a hall from this standpoint rather than artistic form?

It is the recognised duty of the architect to produce the designs of a building *suited for its purpose* and also a thing of beauty. He may do this by a flash of genius in considering the artistic side only and leaving the suitability to chance. Such things have happened, but is it safe to assume *all* architects are geniuses *all* the time, or even that a higher proportion exists in this profession than in others? Surely the only satisfactory way is to take into everyday practice the gradually accumulating knowledge brought into being by the modern application of scientific method whether this knowledge affects design directly, as in acoustics, or more indirectly, as in the science of materials.

The recent addition of compulsory acoustical design and calculation in the Associateship examination of the R.I.B.A. seems a really serious step in the right direction. If more scientific work could be included in professional

examinations the entrants would of necessity have to include more in their training.

It seems to the writer essential to get more scientific instruction and outlook into the training of the architect.

What is the alternative? As stated earlier, whether we approve or otherwise, this is a scientific age, and science has come to stay; it is entering into and, in the opinion of many, raising the efficiency of industrial life. If the training of the architect does not develop taking this revolution seriously into consideration, then his present claims and accepted duties will gradually be absorbed by others who do keep pace with modern conditions.

Obviously the preceding remarks only touch the fringe of the problem. It is realised that the difficulties are being faced by one or two of our leading schools of architecture, but the handicaps under which they have to work are very serious, and not the least of their problems is finding suitably trained teachers of building science.

*The Builder.*—The primary work of the builder, using this term in the narrow sense of building contractor, is the organisation of craftsmen to carry out constructional work efficiently. There are a multitude of very different crafts, and the number is increasing. At present the training of these organisers is very haphazard, varying from office experience only to craft experience only. In a very few cases men may have been through a University course in some branch of a science, but the number who have done so in England can almost be counted on one's fingers. Is it any wonder that the builder is considered so definitely a tradesman in contradistinction to the architect as a professional man? The real implication behind this distinction is that of the difference between unscrupulous carrying out of contractual obligations and a high ethical standard of professional behaviour. Is this just or reasonable? Each of us must answer from his own experience. It is anticipated that each one could prepare a case both for and against the implication.

Meanwhile the building client pays. It seems to the writer that the two sections of architect and master-builder must approach much nearer each other if work is to be efficiently organised—the architect specialising on planning and artistic endeavour, whilst the builder emphasises the craft organisation.

Thus the case for higher education for the builder who is to take organising posts is overwhelming. It is obvious it must be primarily scientific, specialising in the handling of materials and craft organisation but with sufficient knowledge of architectural terminology to enable him to work in intelligent sympathy with the architect collaborator.

The only way the necessary training can be provided for the builder is through building science. The descriptive tradition of the past no longer applies, and much more efficient organisation is required if the modern demands on the industry are to be met. It is not possible to wait till trial and error methods on the full scale have made some adjustment of tradition, even if this were possible: which in the writer's opinion it is not. The problem



introduced by the new materials offered to the industry is in itself too urgent and too complex to be sorted out in any other way than by scientific research.

*The Engineer.*—The training of the engineer is the most scientific of those connected with the building industry. But this training is too one-sided to be satisfactory for general building work. In so far as the engineer works inside the building industry as distinct from civil engineering, just so far does he require much further training in building science. His training, as noted previously, is primarily that of strength calculations. The problems of building are much wider, and if the structural engineer intends to develop as a constructional specialist in normal building work he too requires a fuller training in building science.

### BUILDING SCIENCE

Although the expression "building science" has been used repeatedly in the foregoing remarks, no direct attempt has been made to define it, though by implication the meaning has already been given.

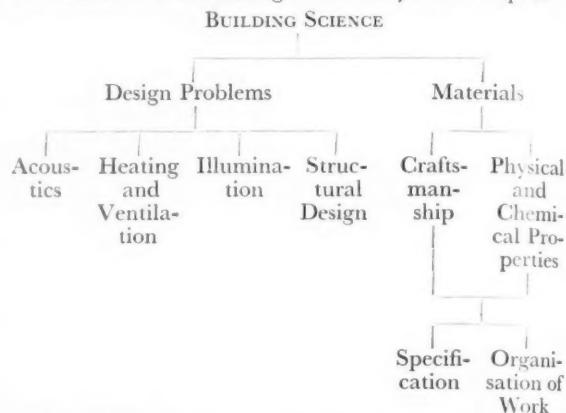
The simplest way, perhaps, is to consider what is meant by engineering science. This is an accumulation of knowledge from all branches of science, but chiefly mathematics, physics and chemistry, adjusted by research and practical experience to give reasonably satisfactory working rules for the solution of problems connected with mechanical power, electricity or structural strength. The materials chiefly utilised are the metals, and the whole science is based upon the possibilities latent in the utilisation of metals. A special science of metallurgy has grown up, which has enabled the engineer to develop still further. But the engineer is also an organiser of craftsmen, though the diversity of crafts is probably not so great as in building, since the majority of engineering craftsmen are workers in metal.

Further, as the engineering science has developed, so the craftsman has also changed. With more and more detailed control rendered possible by the increase in scientific knowledge so many processes have become automatic and carried out by mechanical means. The craftsman has tended to become either more of a technician or more of a machine hand. This has certainly reduced costs enormously and made possible work which had before only seemed visionary.

In training the engineer two divisions are clearly realised—(1) his engineering science training, (2) his practical training. It must always be thus in an applied science; scientific knowledge will never be independent of the human factor of craftsmanship and of human experience, for it is highly improbable that a *complete* knowledge will ever be obtained.

So with building science. The practitioner of the future will have his building science training and also his practical training; his training in a tradition based on scientific outlook and his training in the adjustments necessary because the building science is not as complete as required.

The following diagram indicates the writer's idea of the basis on which building science may be developed.



If the architect is to be arch designer and arbitrator of the whole of the work, then he must have a considerable knowledge of all of these various branches of the science. The builder will naturally specialise more on those included under the heading of Materials, but if he is really to be the organiser of the whole work, then he too must have a general knowledge of the other branches.

Either the engineer will stick to the one branch of structural design and be consulted on this side of the work only or he too will have to include in his training the other subjects of study.

As with the structural engineer so with other specialists it is quite probable they will continue to develop as such. But if they do, how much more necessary it is for the organisers of the whole job to have sufficient knowledge really to co-ordinate all the specialist's works.

The writer has tried to outline in as brief a way as possible his conceptions of the present development of the building industry. To do justice to the subject would require several volumes, but he hopes a sufficiently clear picture has been presented of the only way in which, in these modern days of intense scientific development, an ancient and honourable industry can "enliven and enrich" its tradition. Research and higher scientific education are the only real weapons in the present state of civilisation. Perhaps never before has the need for national economy been so great. The matter is urgent.

It is submitted that now that building research has developed appreciably, the other key required to obtain entrance for the industry into the state of efficiency demanded by national needs is higher scientific education. A considerable body of knowledge built up on scientific lines now exists—it can only be employed fully by those with some scientific training. There are very real difficulties in providing this training even when the general thesis is accepted. The root difficulty is the provision of teachers. The writer believes this can be got over, and there are indications that certain branches of the industry share this view.

## Review

MEDIAEVAL SCULPTURE IN FRANCE. By Arthur Gardner, M.A., F.S.A. Cambridge University Press. [1931]. (£3 13s. 6d.)

Reviewed by PHILIP MAINWARING JOHNSTON, F.S.A. [F.]

This is indeed a *magnum opus*, both in size and quality, a *chef-d'œuvre*, a storehouse of precisely stated and orderly facts, an almost exhaustive picture gallery of first-class photographs, which, with the few exceptions stated in the preface, are the personal work of Mr. Arthur Gardner himself, one of the most skilful wizards of the camera now living. This magnificent *tour de force* represents, as the author modestly claims, "a not inconsiderable amount of travel and research spread over a good many years"; and that research, be it stated, not confined to buildings and museums, but embracing the whole range of archaeological and architectural publications and text-books of France and neighbouring countries. The patient weighing and sifting of a whole library of cosmopolitan literature would daunt many a student, and deter any but the most pertinacious of enthusiasts, which Mr. Gardner has proved himself to be.

Those who remember the serial publication of *Mediaeval Figure Sculpture in England*, under the joint authorship of E. S. Prior and A. Gardner, in the *Architectural Review*, early in the present century, and its re-issue in book form by the Cambridge University Press in 1912, will be very sure that a work by one of those scholarly writers on similar lines, dealing with the development of mediaeval sculpture in France, would be in the front rank, and almost the last word on the subject.

There are, of course, many first-rate books on this subject written in French, such as Camille Martin's *L'Art Roman en France*, in three folio volumes; *Le Style Roman en France*, by René Colas; *Les Sculpteurs Français du XII<sup>ème</sup> Siècle*, by Louise Lefrançois-Pillion; besides Dr. Julius Baum's *L'Architecture Roman en France*, of which there is an edition translated into English, and the works of Edouard Corroyer, Marcel Aubert, Camille Enlart and Lasteyrie. And then we have the veteran Ruprich-Robert's *L'Architecture Normande*, and, last but not least, Prof. A. Kingsley Porter's ten volume work on *Romanesque Sculpture of the Pilgrimage Roads*.

But admirable and indispensable as these are, they only cover part of the ground, and Mr. Arthur Gardner, in his preface, claims that "so far no comprehensive text-book on the history of the development of French mediaeval sculpture has appeared in the English language." And even in French "the only comprehensive account of the sculpture of the whole mediaeval period" appears to be "that contained in Michel's *Histoire de l'Art*, inconveniently set out for students in "a number of articles spread over eight or ten substantial volumes dealing with the whole of Christian art." Viollet-le-Duc's immortal *Dictionary*, of course, contains a valuable article on sculpture; and M. Marcel Aubert has recently published a brief sketch on *La Sculpture Française du Moyen Age et de la Renaissance*, which is excellent as far as it goes, but is necessarily only a summary.

There was, therefore, ample room for Mr. Gardner's detailed survey of the mediaeval sculpture of France, embracing, as it does, every phase from Romanesque to latest Gothic, and very admirably has he fulfilled his self-imposed task—a task which from start to finish this reviewer knows to have been a labour of love.

Mr. Gardner refers in his preface to some of the outstanding French authorities on mediaeval sculpture, a few of which, to-

gether with others not mentioned, are set down in this review: but in truth the literature on the subject, inseparable as it must needs be from works of a general nature dealing with French Romanesque and Gothic architecture, is well nigh inexhaustible; and though this book is a weighty one, extending to close on 500 pp., exclusive of 113 plates, the author has managed to condense and compress all within the covers of this one stout volume. And, alas! this is a weighty volume in the other sense. Its *embonpoint* makes it somewhat difficult to handle, or to carry on a long train journey. It is rather a book for the library table or desk. One other small complaint may be regarded as the publisher's, rather than the author's affair—the unpleasant smell of the paper on which the text and text illustrations are printed; a smell that recalls a ripe Camembert. Is there no resource of science known to the Cambridge University Press by which this odour might be eliminated? Time does not dispel it, nor exposure to the air, as three months on a library table have sadly convinced one person at least.

A few errors or misstatements remain to be pointed out: P. 83. The great portal at Morlaas, with its wealth of statuary and carvings is dismissed by Mr. Gardner as "completely destroyed by restoration," which is far too sweeping a statement. It has been restored in the very thorough French fashion, but the greater part of the curious sculptures is genuine old work.

P. 191, pl. xxxiii. La Charité-sur-Loire: the tympanum here illustrated should be described not as "The Ascension," but as "The Transfiguration of Our Lord," the flanking figures, of course, being Moses and Elijah.

On p. 190, in describing the "richly carved tympanum" of St. Étienne, Beauvois (north doorway of nave), Mr. Gardner writes as though the doorway were beneath the wonderful wheel-window with the seven ages of man sculptured round it, under the stone-trellised twelfth-century gable of the north transept. Actually, of course, though both of the same period, they are entirely separate as to position. It may be remarked here, though it is not alluded to in the text, that the tympanum in question, which is bordered by strange long-bodied lions, is carved with the classical myth of Alexander being carried up to heaven in a sort of cage by a pair of griffins (here shown as human-headed), as a type of the Ascension of Our Lord; and that we have the same queer subject carved on the tympanum of that obviously French Romanesque doorway at Patribourne, Kent; and, again, as this reviewer discovered, on a capital of Abbot Samson's gateway tower at Bury St. Edmunds.

As is well known, we have in Rochester W. front another doorway that betrays Angevin influence, and that must have been carved by men schooled in the Romanesque of Poitou; and it is almost the only surviving instance in England of pillar-statues.\* In the museum at York are four statues over life size and part of a seated figure of the Madonna and Child from the

\* Down to about 1840 there remained in the wall of the old Moot Hall, Colchester, two windows and a doorway of richly ornamented Romanesque work; and one of the windows, of great size, and of two orders, was carved with plume-like foliage, precisely similar to the Rochester doorway, while the shafts of the inner order bore statues of a bishop and another figure, like the King and Queen at Rochester. No stone of these Colchester windows and doorway remains, but there is a small engraving of one of the windows in Vol. I of the *Journal of the Brit. Archaeol. Assn.*, p. 143.

jamb and tympanum of a late twelfth-century doorway of St. Mary's Abbey. See Prior and Gardner's *Med. Fig. Sculpture in England*, pp. 214-17.

Pillars in religious art are symbols of men (cf. the "pillar of salt," the "pillar of a cloud," the pillars called "Jachin and Boaz" in the Temple, "Cephas and John, who seemed to be pillars," "Him that overcometh will I make a pillar in the temple of My God"); and this is true of Greek and Roman classical art, as well as of Hebrew and Christian, as witness the Atlas and caryatid figures, of which we have an amusing modern reproduction in that queer vestry of St. Pancras Church, London. It is not surprising, therefore, that this idea was seized on and elaborated in Romanesque art in France, Spain, etc.; and one of the earliest instances, which this reviewer drew the other day in Notre Dame de la Couture, Le Mans, is illustrated here by Mr. Gardner (p. 196). There must have been connecting links between this germ, the bas-reliefs of saints in the cloisters of Moissac, and the full-relief statues which ornamented the West portals of St. Denis (1133-1145), the great Church of Abbot Suger, from which so many new departures in art, and even the inception of the Gothic style itself, can be dated. Montfaucon's drawings of these pillar-statues, allowing for their date (1729) appear to be remarkably truthful renderings of the twelfth-century figures, and certain details, such as the form of crown worn by a queen and some of the kings, and the *bonnet juif*, a curious shell-like head-dress on one of the figures (pl. p. 478, *verso*), are unmistakable evidence of this date. This reviewer, who has known Saint Denis for the past forty years, would plead for the authenticity of the sculptures on the arch tympanum and jambs of the central doorway and the jambs of the side portals, in spite of the barbarous restorations and replacement of heads, etc., in 1833. Mr. Gardner quotes the inscription which Suger caused to be cut in the lintel under the great Last Judgment:—

*Suscipe vota tui, iudex districti Suger! Inter oves proprias, fac me clementer habere.*

But he omits, as others have done, to call attention to the remarkable fact that among the nude figures rising from their graves, carved on this lintel, is a bearded man in a monk's frock, kneeling in supplication at the feet of the Divine Judge, which has escaped, as by a miracle, mutilation, and which can be none other than Suger himself—a votive figure, in fact—repeating his humble petition throughout the centuries. Not only is he contrasted in attitude and clothing, but he is placed above the figures in the opening coffins.

It is fitting here to emphasise a feature of these great French Judgment Portals which hardly finds an echo in England,\* and which is strikingly exemplified by this central portal at Saint-Denis, viz., the parable of the Five Wise and Five Foolish Virgins. Sometimes they encircle the arch-order with a bust of the Heavenly Bridegroom in the centre accepting and repelling the Wise and the Foolish. Here they ascend the jambs, left and right, those on our Lord's right holding their oil-fed lamps alight, and those on His left bearing the empty lamps upside down. The parable is enacted as it were to the *finale* here, the uppermost wise virgin standing before an open doorway of the Heavenly Mansions, within which stands the Porter,† while

on the opposite side the foolish virgin at the head sinks down in a despairing posture as she grasps the knocker of a closed and bolted door.

The reviewer has noted twenty-two examples in France of this sermon in stone, so grave in its import and so fitting as an adjunct to a Judgment Portal; and others occur in Switzerland and Germany. It is all the more strange the fashion did not spread to England.

The very frivolous Foolish Virgins at Strasbourg—one of whom has dropped and broken her lamp, while she dallies with a male tempter (p. 370)—are among the latest in a series which extends from the twelfth to the fifteenth century.

Mr. Gardner has found space for the Virtues and their contrasting Vices; for the Zodiac, and the Occupations of the Months, the Sciences (but apparently not the Muses and Sybils) and not a few subjects from the Bestiary. And, of course, the book is a portrait gallery of saints and angels.

This reviewer is disappointed to find only a bare reference to the astonishingly delicate twelfth-century reliefs, now forming a frieze in a southern chapel of the *chevet* of the Abbey Church of Fécamp, but originally the sides and ends of a stone chest or shrine, made to contain the bones of the great rebuilding Abbot, Guillaume de Ros, at his translation.‡ The work has almost the delicacy of ivory carving, and is perhaps unsurpassed in the smaller stone reliefs of its period.

What is described and illustrated as a twelfth-century stone altar-frontal, at Carrières-Saint Denis (p. 66) should be entitled a *retabulum*, or altar-piece—a very rare survival.§

A fact which this book brings out is that, as in England so in France, there were two great periods in art, sculptural and other, in the century *circa* 1150-1250, and the grand flare-up before Gothic architecture burnt itself out, *circa* 1480-1530. Of this latter period, which cannot of course be limited to a precise term of years, one may exclaim as one scans Mr. Gardner's wonderful photographs, in Mr. Wackford Squer's words: "Here's richness!" If the figure sculpture of the earlier period often rivalled the apogee of Greek art at its zenith—as it assuredly did at Paris, Chartres, Amiens and Rheims—the same comparison may be made between the finest works of ancient Rome, in the flood-tide of her glory, and the marvellous autumn splendour of French plastic art. Let a few examples suffice. Look at the beauty and natural grace of the Virgin at Riom—a resuscitation of the finest thirteenth-century tradition (like our censuring angels in the Westminster transept, which Lethaby put on a par with the best Greek)—she smiles as she gazes half playfully at her Child. Then there are those marvellous prophets of the Dijon Calvary; the sculptures of Brou (pp. 412, etc.); the Entombments at Tonnerre (p. 422); the lovely head of the Magdalen at Chaource; Sémur-en-Auxois Troyes and Chalons-sur-Marne. Little space is left in the book, and still less in this review, to dwell upon the sculpture of mediæval woodwork, a department in art where England easily beats France, both in quality and quantity. It is surprising how little has survived from the twelfth, thirteenth and fourteenth centuries, in which we are well represented. The splendid stalls of Amiens and Brou were executed in the first quarter of the sixteenth century.

\* The Judgment doorway of the Angel Choir at Lincoln is a solitary instance.

† A nude figure that can hardly be meant for the Bridegroom.

‡ French and English antiquaries alike had ignored these remarkable carvings, which constitute a Life of Christ, till this reviewer

brought them to the notice of the Society of Antiquaries in 1927. See *The Antiquaries Journal* for October of that year.

§ It is now in the Louvre. Viollet-le-Duc gives a drawing and description in Vol. VIII, p. 36, of the *Dictionnaire*. Mr. Gardner's photograph is not up to his usual standard of excellence.

## R.I.B.A. New Premises

The competition for the design of the new building for the Royal Institute of British Architects in Portland Place has aroused great interest, not only among architects, but among the general public. The competition, which has been open to all the members of the R.I.B.A. and its allied and associated Societies, closed on 31 March. About 300 designs have been received both from architects in this country and architects practising in the Overseas Dominions.

The problem of finding suitable and sufficient accommodation for the hanging, judging and public exhibition of so many designs has been solved, by arranging to hold the exhibition at the new Thames House, Millbank. No better building could have been found—it is admirably suited for an exhibition, being easy of access and well lighted. There is ample accommodation for the adequate display of all the drawings, and the R.I.B.A. is to be congratulated upon having obtained the use of part of Sir Frank Baines's fine building.

The hanging of the drawings will commence on 4 April, and it is expected that the judging by the Jury

of Assessors will take the greater part of April, and that the Jury's Award will be announced on 30 April.

It will be remembered that the members of the Jury of Assessors are Sir Giles Gilbert Scott, R.A., Dr. Percy S. Worthington, F.S.A., Mr. H. V. Lanchester, Mr. Robert Atkinson and Mr. Charles H. Holden.

The exhibition of the designs will be held from 2 to 14 May, both dates inclusive, from 9.30 a.m. to 7 p.m. (excepting Sunday). Admission will be free, and members of the public, as well as members of the architectural profession, are cordially invited to visit the exhibition.

An exhibition of certain products of Imperial Chemical Industries, Ltd., which are of particular interest to architects will be held in the building from 21 April to 14 May, and no doubt all those who visit the exhibition of drawings will also take the opportunity of inspecting the display which is being organised by the I.C.I.

The R.I.B.A. wishes to record its grateful thanks to General Sir Louis Vaughan, K.C.B., and the other directors of Thames House Estate, Ltd., for their kindness in allowing the R.I.B.A. the use of Thames House.

## Correspondence

W. R. LETHABY

Wellington Chambers,  
Ayr.  
4 March 1932.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—Living away from London, may I be permitted as a voice from the wilderness to articulate a thought, which may also be the thought of many, and even the hope of not a few, that following F. W. Troup's obituary notice of Lethaby and the more recent Institute meeting, the time may have come for a Memorial Volume, possibly in like spirit to that of the Memorial Volume of John D. Sedding, compiled by the Architectural Association in 1892; and to which Lethaby himself contributed a wonderful little drawing of The Way of Life winding through a wood, and passing naturally out of sight behind the trees.

There are many of Lethaby's writings and articles hidden away in magazines and periodicals, which should be given a less fugitive habitation; and these, together with a selection of his designs, drawings, and work in craftsmanship, are deserving of permanent record. It might well be, therefore, that the Institute, following its many encomiums of the man and his work, should lead in the compilation of a subscribed Memorial Volume, or some other form of enduring remembrance.

Those who knew Lethaby best and, therefore, loved and revered him most, are now men between the seventies and eighties; who, before their intimate and personal knowledge passes with themselves, might place on record, as Wilson did for Sedding, their sure touch of sympathetic understanding and living appreciation. For myself, I scarcely had the privilege of knowing Lethaby, save for occasional meetings and some little correspondence; but from these I think I garnered sufficiently

to apprehend at least something of his fine spirit and commanding gentleness. While never a man of affairs in the strident sense, he was abundantly forceful in his quietness and sincerity, for his was "the still small voice" that endures; a characteristic that, with a woman's intuition, Miss May Morris made manifest at the recent meeting.

Her father, William Morris, was Master of the Art Workers' Guild in the year in which I was elected a member, and he, with Walter Crane, Sedding, Micklethwaite, Heywood Sumner, Onslow Ford, Selwyn Image, Emery Walker, Lethaby, and Okey were among the early Masters or members. These were the days of the Barnard's and Clifford's Inns meetings, attended by many men whom it was alike an inspiration and an education to meet and hear speak—talk together might be a more fitting expression of the fellowship, for the talking was friendly and brotherly communing, rather than formal speech-making.

Only a few men still living were in intimate touch with Lethaby in his early and vividly questing days; as he again in turn was with Norman Shaw, most kindly of men, and Philip Webb—but these must have many fragrant and loving memories of the man, for Lethaby's life was one of giving rather than getting, as all great lives must ever be. He was one of the big men of his time and modest withal, a rare enough quality in these pushful days. And then, what a fine artist! He himself having beheld the vision, had the aspiration in the spirit of worship by work, to make it known also to others. His architecture was like his writing, sensitive and beautiful, in its reach and penetration touching the things that are real. I always had the feeling that he was a very lovable man, childlike as are all spiritual people; and of an understanding so profound and deep in its simplicity that there was need for neither noise or moan.



Who may fitly write of such men? for while they were close to us, they were yet beyond us, and often passed without being known; indeed, they perhaps preferred that it should be so.

Surely then, at least a Memorial Volume could still be compiled by the early and lifelong friends yet remaining. The Art Workers' Guild, wherein much of his energy found ground prepared for fruition, must hold alike memories and records; and from old friends there, and in the Royal Institute of British Architects, which offered him the distinguished honour of its gold medal, a fitting Memorial might well be prepared in remembrance, as also for the inspiration and encouragement of at least the younger men of to-day.—Believe me, Yours sincerely,

JAMES A. MORRIS, R.S.A. [F.]

[Since the Meeting at the Institute on 15 February, at which Sir Reginald Blomfield read his paper on W. R. Lethaby, there have been many hopes expressed that it might be possible to publish a full memoir, and also to republish certain of Lethaby's writings which have hitherto only appeared in serial form. It would help to give some indication of the possibility of producing such a Memorial Volume as Mr. Morris suggests, if those members who would be likely to support such a venture would write to the Editor of the JOURNAL.—Ed.]

9 Gray's Inn Square,  
London, W.C.1.

To the Editor, JOURNAL R.I.B.A.,—

14 March 1932.

DEAR SIR,—Some twenty years ago the late Prof. Lethaby encouraged me to write a little book on structural mechanics. In the very last words which I heard from him last year he urged the need for a further book illustrating the charm of undraped structural members efficiently fulfilling their obvious purpose; instancing, *inter alia*, if I remember rightly, a new building at Amsterdam. It is not without interest to note that this was obviously the Bourse of Dr. Berlage.—Yours faithfully,

PERCY J. WALDRAM [L.]

## ARCHITECTS' UNEMPLOYMENT FUND

We have pleasure in publishing below the seventh list of donors and subscribers to the Architects' Unemployment Relief Fund.

The following have joined the scheme as subscribers from the Liverpool Area, their subscriptions being sent through the Liverpool Society:—

Messrs. Woolfall and Eccles: Mr. F. P. Webster; Mr. T. Capstick.  
Mr. B. A. Miller; Mr. F. X. Velarde; Mr. C. H. Hutton.  
Mr. Gilbert Fraser; Mr. W. Pecorini.  
Liverpool Housing Department: Mr. J. Grieve; Mr. J. N. Meredith; Mr. C. L. Pepper; Mr. W. R. Price; Mr. M. B. Blackburn; Mr. J. Hughes; Mr. H. E. L. Cole; Mr. P. Whitehead.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—While that departed genius, W. R. Lethaby, lingers on the screen of our mental vision, I would like to record my vivid memory of a chance meeting with him in the Old South Kensington Museum. I had emerged from my articles, feeling very raw and very diffident, and had spent my first "free" holiday studying the wonders of Canterbury. I was gazing at some twelfth-century enamels in a case, when Lethaby came up and asked to see my sketch-book. His quick, cordial praise of some drawings of that (for England) uniquely early "Little Cloister," which is actually a relic of Lanfranc's eleventh-century work (incorporating marble capitals and twin-shafts of sugar-stick form, which Lethaby said Lanfranc must have imported, ready worked, from Italy), fired my enthusiasm to pursue the study of Romanesque art in all its forms. The memory of his keen sympathy remains fresh to this day, though I write of nearly fifty years ago. We met many a time since, and the great man sent one of his best pupils to me for advice on a special subject of ancient art.

It is to Lethaby we owe a wonderful reconstruction on paper of the lost cloister of St. Mary Overie, Southwark (now the cathedral), a work which he ascribed, in a short paper contributed to *The Archeological Journal*, to the late twelfth-century French school of Canterbury. The fragments which inspired him to write this article had been thrown aside as "builder's rubbish" in the very unsympathetic and cast-iron rebuilding of the thirteenth-century nave of the Priory Church.

He was a great man, a great scholar, a romanticist, a true antiquary, an artist in every sense. Shall we ever look upon his like again?

PHILIP MAINWARING JOHNSTON, F.S.A. [F.]

Mr. L. Barnish; Mr. J. H. U. Owen; Mr. D. W. Richards; Mr. Charles A. R. Swan.

Subscriptions are also being received from:—

Messrs. Evans, Clark & Woollatt; Mr. Frank Hawley Harrington; Mr. Arthur Thorpe Newsum.

Mr. H. M. Lewis; Mr. W. Scotter Owen.

The following donations have been received:—

£10 10s. from Messrs. Gray & Evans and F. W. Crossley through the Liverpool Society; £3 10s. from Miss Ruth Jackson; £1 1s. from Mr. Harold Griffin and Mr. F. J. Ward; £1 from Miss H. Lachlan (2nd donation), and Mr. Alfred Howard; 10s. 6d. from Mr. Walter Roberts; 5s. from Mr. J. Winston Williams.

## Obituary

MARCUS KENNETH GLASS [F.]

The late Mr. Glass commenced practice in Newcastle-upon-Tyne in the year 1914, when he was appointed architect of the new Jesmond Synagogue, Newcastle-upon-Tyne. This work was successfully completed in 1915. In this period Mr. Glass built many business premises and shop fronts before the war brought work to a stop.

Until 1918 Mr. Glass was attached to the Royal Engineers in connection with buildings commandeered by the Government for war purposes. Immediately the war was over he re-commenced practice and concentrated upon the re-modelling of business premises and the design of shop fronts and interiors. In the design of Synagogues he was especially skilled, and notable examples of his work are the synagogues in Ryhope Road, Sunderland, and at Lea Bridge Road, Clapton, London.

Domestic buildings were also included in his general work, but it was chiefly in the design of business premises and shop fronts and interiors that Mr. Glass displayed particular skill. To retain for the architectural profession the dignity of being solely responsible for the creation and design of all shop window work was his chief aim during his business career.

To design and superintend business premises in various parts of Scotland and England and personally supervise these works entailed a tremendous amount of energy, and the constant anxiety to serve his clients with the utmost diligence eventually reduced his bodily energy to such an extent that he at last succumbed to an ailment which had threatened him for many years.



## Allied Societies

### NOTTINGHAM AND DERBY SOCIETY

At Derby on 16 February Mr. T. Alwyn Lloyd [F.] read a Paper to the Nottingham and Derby Society on "Town Planning and Estate Development."

First, Mr. Lloyd briefly surveyed the various Town Planning Acts, and particularly emphasised the importance of the Bill at present before Parliament with its provision for the planning of *all* land whether built on or not. The main objects of town planning were defined as

- (1) The laying out of land to the best advantage, both from the public and the owners' points of view.
- (2) The preservation of amenities.
- (3) The provision of the best routes for traffic.
- (4) The "zoning" of areas, according to their suitability, for various purposes.
- (5) The limitation of density of buildings, and the control of their character to prevent overcrowding and wrong development.
- (6) The provision of open spaces and playing fields.

The object of town planning was, he said, frequently misunderstood by the public; it should be made clear that town planning did not entail the acquisition of property by the local authority, nor were the owners' rights at common law interfered with except to the limited extent provided in the scheme; compensation being paid when it could be proved that the provisions of the scheme would result in loss to the owner. What town planning did was merely to control development *as and when* it took place. Landowners, with any sense of responsibility, were usually not averse to schemes of planning in their districts and were prepared to give and take.

Town planning in the "grand manner" was not, said Mr. Lloyd, what he proposed to deal with, but rather the humbler aspects of planning and development and the layout of housing schemes on garden city lines. He emphasised the importance of the site and of the architect making a detailed survey of it; so much recent building development had been along existing roads so that the towns stretched "tentacularly" far into the country, the back land being given little attention. Ribbon development was unsightly, and thoroughly uneconomic, since local authorities had to spend more on road widening, and sewers, and gas, water and electric mains than would be necessary if development had been on more scientific and comprehensive lines. The cheaper back land afforded opportunities for pleasant grouping and for quietness. Most householders preferred to live away from the main roads.

Regarding the layout, Mr. Lloyd felt that it was unwise to dogmatise as to whether the plan should be on formal or informal lines; it all depended on local conditions. On flat land, there was much to be said for a formal plan, whereas on an undulating site, informality accorded naturally with the physical conditions. Even on flat sites it was not necessary to adhere rigidly to formality as added interest could be given by following the lines of existing trees, hedges and roads. On undulating or hilly land the layout should still be kept as simple as possible, although the contours might not lend themselves to much regularity of treatment. The very inequalities of the land, however, would usually provide the necessary relief in a plan without it being striven for. Mr. Lloyd advocated the use of "service roads," *i.e.*, an inner road for access to houses which are set well back, with a green margin between it and the main road, so that purely residential and waiting traffic might be kept off the main road. It was not desirable, he said, that a main road should be frequently intercepted by side roads, so that the planning of these should be carefully thought out.

Where a large number of houses were to be built at the same time, continued Mr. Lloyd, there was obviously a better chance of obtaining a good layout and architectural unity than when the erection of houses proceeded spasmodically. For this reason a housing estate of a local authority or a public utility society presented excellent opportunities for the type of site planning to which he had referred. That so many municipal estates were disappointing in layout and design pointed to the widespread failure to take advantage of such opportunities.

There was ample scope for arranging the set-back of buildings from roads in order to obtain variety and interest in the layout, though, said Mr. Lloyd, it was unwise to make alterations to the building line aimlessly.

Mr. Lloyd then spoke of the general rules governing width of roads in relation to building lines; of the grading of roads under town planning schemes, and the materials and construction of roads in relation to town planning schemes.

Referring to the grouping of houses, he said that the architect's endeavour should be to design in street pictures and not in terms of individual buildings. In designing a housing scheme, it was not necessary to have a large number of type plans; only there should be sufficient variation to suit accommodation and aspect; with a few type plans, variation might be obtained in external appearance by the use of gables, hipped roofs, different coloured paints and in colour-washing if roughcast was used. Mr. Lloyd pointed out the undesirability of mixing bungalows with houses in the same road, and the necessity that provision be made, on the larger estates, for playing fields, allotments and adequate sized gardens.

### THE MANCHESTER SOCIETY

A lecture arranged by the Manchester University, Manchester Royal Institution, the Manchester Builders' Federation and the Manchester Society of Architects, was delivered at the University on Wednesday, 24 February, by the Hon. H. A. Pakington [F.], when the chair was taken by Mr. J. H. Worthington, O.B.E., M.A. [F.], President of the Manchester Society of Architects.

The title of Mr. Pakington's address was "Sense and Sentiment in Architecture," and after quoting definitions of sense as "Practical Wisdom," and sentiment as "a view coloured with emotion," he proceeded to show how these two are pre-eminently necessary to the architect, the two qualities which the world considers incompatible.

It is for this reason, he said, that the architect is the butt of the universe. He is attacked on two sides. The sentimental jeer at him because he is too sensible, and the sensible deride him because he is too sentimental. The sensible, being predominant, usually impose their view upon the community. He wished, however, to plead the cause of emotion—sentiment—and would not admit that sense and sentiment are incompatible.

Mr. Pakington differentiated strongly between real sentiment and the false sentiment of covering steel girders with old oak, putting some half-timbering in the gable, and generally looking back through rose-coloured spectacles upon the past.

Turning from the old and ugly to the new and beautiful, Mr. Pakington showed a slide of one of N. Dudok's schools at Hilversum. Here, he said, was no attempt to copy past styles, but merely a determination to work in the great tradition of experiment and adventure.

He described Fonthill Abbey in Wiltshire as the finest flower of the romantic period of English Architecture, describing and illustrating this fantastic design, which collapsed a few years after it had been built.

In Victorian days, he said, we find this sentimental regard for times that are gone echoed in the architecture of the period. It became the fashion to design churches in exact accordance with ancient precedent. The Gothic styles were dissected and classified, though the classification was sometimes difficult to follow, as when we find a writer of the day referring to "the early days of the Late Middle Pointed."

After showing many slides of buildings old and new, Mr. Pakington summarised his point of view, saying that architecture is the art of building tuned up to the pitch of the higher values of life.

Since the earliest days when man first made the attempt to make his house look pretty, this sentiment, this sense of emotion, had never been absent from the highest forms of architectural design.

In conclusion Mr. Pakington quoted a line of John Drinkwater, "If all the houses looked as though some heart were in their stones." That, he said, really sums up all I want to say. Let us look for the heart in the stones.

## ESSEX, CAMBRIDGE AND HERTFORDSHIRE SOCIETY

## CAMBRIDGE CHAPTER

A very successful meeting was held in the University Engineering Laboratory on Friday, 19 February 1932, when a film entitled "The City of To-morrow"—claimed to be the pioneer town-planning film—was exhibited and explained by Mrs. Olive Aldridge.

The Mayor of Cambridge presided over a very representative gathering, which included members of the Borough and County Councils, C.P.R.E., the Preservation Society, and the National Council of Women.

The film, which was produced in Berlin at the Atelier Svend Noldan, the work being made possible by State and municipal grants, is divided into two parts, the first part dealing with the haphazard development of an industrial district. The spectator is shown an enormous crop of factories, tenements and business houses jostling one another and shooting up in every quarter of the district. Interspersed with the miniatures of the town are close-ups of actual features of German industrial towns to-day. The second part of the film shows a similar district planned to the nth degree.

Mr. H. H. Dunn, F.R.I.B.A., the Chairman of the Chapter, proposed a vote of thanks to the Mayor.

*For information as to the hiring of the film, secretaries of Allied Societies should refer to Mrs. Olive M. Aldridge, 11 St. Ann's Terrace, St. John's Wood, London, N.W.8.*

The annual dinner and dance of this Society will be held on Saturday, 9 April 1932, at the Abercorn Rooms, Bishopsgate, E.C. Reception by the President of the Society and Mrs. Phillips Dales at 5.30 p.m. Dinner 6 p.m. Dr. Raymond Unwin, President R.I.B.A., has promised to attend, and other distinguished guests are to be invited. Cards of invitation, etc., from Arthur C. Russell, Hon. Sec. Dinner Committee, "Cleadow," Great Nelves, Hornchurch, Essex.

## R.I.B.A. PROBATIONERS

During the month of February 1932, the following were registered as Probationers of the Royal Institute:—

- ATKINSON: ALFRED MACAULAY, School House, Chapel Lane, Coppull, nr. Chorley.  
 BULL: WILLIAM RALPH, c/o The Architectural Association 34 Bedford Square, W.C.1.  
 BURMAN: ARTHUR BERNARD LEWIS, P.O. Box 141, Port Elizabeth, S. Africa.  
 CHIVERS: THOMAS ARTHUR, 210 Cathedral Road, Cardiff.  
 COMRIE: ELIZABETH FERGUS, 35 Manor Place, Edinburgh.  
 DORAN: HAROLD JAMES, 841 Dollard Avenue, Outremont, Quebec, Canada.  
 EDMISTON: WILLIAM HARLEY FOWNES, The Hall, Blackheath Park, S.E.  
 GRAYDON: ROBERT WILLIAM, 10 The Avenue, Felling-on-Tyne, Co. Durham.  
 HEUGH: PETER WILLIAM, 7 High Street, Uitenhage, Cape Province, South Africa.  
 HILL: GWYNETH WALDO, The Court, Brean Down Avenue, Weston-super-Mare, Somerset.  
 HODGKINSON: DOUGLAS WILFRID, Croft Cottage, Sandy Lane, Hucknall, Notts.  
 KETH: GEORGE MCINTOSH, 10 Sinclair Gardens, W.14.  
 MCGOWAN: WINIFRED MARY, 13 King Street, Oldham.  
 MACKAY: JAMES CAMPBELL, Gowanbrae, 44 Gartcows Road, Falkirk, Stirlingshire, N.B.  
 MADDEN: ANTONY AUGUSTIN, 57 Cann Hall Road, Leytonstone, E.11.  
 MEARS: ERNEST JAMES, 53 Lauderdale Street, Edinburgh.  
 NEWTON: JESSE RONALD, 28 Station Road, Langley Mill, Notts.  
 NYE: DAVID EVELYN, 57 The Oval, S.E.11.  
 PHILLIPS: MARGARET MARY, 1 Newton Grove, W.4.  
 ROWORTH: WILLIAM LESLIE, 24 Saxe-Coburg Place, Edinburgh.  
 SIMPSON: JOHN CHURCHILL, 123 Bellevue Road, Durban, South Africa.  
 SMITH: JOSEPH, 6 Sackville Gardens, The Drive, Ilford.  
 SPENDER: JOHN HUMPHREY, 10 Frognaal, Hampstead, N.W.3.

STEVENSON: FREDERICK ROBERT, 39 East Claremont Street, Edinburgh.

TYRRELL: JOHN EDWARD, 100 Dalmally Road, Addiscombe, Croydon, Surrey.

VOS: ERIC FRANCIS, P.O. Box 268, Port Elizabeth, South Africa.

WHITE: MARGARET JUSTIN BLANCO, 44 Downshire Hill, Hampstead, N.W.3.

WILLIES: WALTER IVOR, 12 Newhaven Road, Berea, Durban, South Africa.

WRIGHT: EDWARD JOHN, "Bank House," Alfreton Road, Nottingham.

## Notices

## THE ELEVENTH GENERAL MEETING

The Eleventh General Meeting of the Session 1931-32 will be held on Monday, 11 April 1932, at 8 p.m., for the following purposes:—

To read the Minutes of the Tenth General Meeting held on Monday, 21 March 1932; formally to admit members attending for the first time since their election.

To read the following paper: "Aerodromes," by Mr. John Dower, M.A. [A.].

## SPECIAL GENERAL MEETING

At the conclusion of the above General Meeting a Special General Meeting will be held for the purpose of confirming the resolution passed at the Special General Meeting held on 21 March 1932, approving the amendment of the Declarations to be signed by Fellows, Associates, Honorary Associates and Licentiate, referred to in Bye-law 23 as Declarations A, B, C and D. (See Minutes of the Special General Meeting, 21 March, on page 444 of this issue of the JOURNAL.)

## EXHIBITION IN THE R.I.B.A. GALLERIES

In connection with the Sessional Paper to be read on Monday, 11 April 1932, an Aerodromes Exhibition will be held in the R.I.B.A. Galleries and will be open daily until Saturday, 30 April, between the hours of 10 a.m. and 8 p.m. (Saturdays, 10 a.m. and 5 p.m.)

## R.I.B.A. ANNUAL DINNER 1932

The Annual Dinner will take place on Friday, 8 April 1932, at Claridge's Hotel, Brook Street, W.1, at 6.45 for 7.15 p.m.

All members of the R.I.B.A. and of the Allied Societies who wish to attend and have not yet applied for tickets are requested to do so immediately. The price of tickets is 15s. each (exclusive of wines, cigars, etc.) for members and their guests.

Separate tables for parties of six or eight will be available.

## TRAVELLING FACILITIES

For the convenience of members and their guests from the country arrangements have been made with the Railway Clearing House by which "fare and a third" rate for the double journey will be available from 7 to 9 April inclusive. Tickets at the reduced rate will be obtainable from any station outside London on production of a voucher to be obtained on application to the Secretary R.I.B.A.

## THE ARCHITECTS' CONFERENCE, MANCHESTER

15-18 JUNE 1932

The Annual Conference of the Royal Institute of British Architects and its Allied and Associated Societies will take place at Manchester from 15 to 18 June 1932. The Manchester Society of Architects have in hand the preparation of a most

attractive programme, and particulars will be issued in due course.

All members and students of the R.I.B.A. and all members of the Allied Societies, the Architectural Association, and the Association of Architects, Surveyors and Technical Assistants, are cordially invited to attend the Conference.

It is expected that there will be a large attendance of members from all parts of the country, and they are urgently requested to arrange for their hotel accommodation at the earliest possible dates so as to avoid the risk of disappointment. When communicating with Manchester hotels, please mention R.I.B.A. Conference, as a number of rooms have been specially reserved for members. Reservations can be effected through Messrs. Thos. Cook and Son, Ltd.

The Executive Committee of the Conference have kindly furnished the following list of hotels, with charges:—

	Bed and Breakfast per day.	Full Board.
Midland Hotel	15/- to 24/6	27/6 to 37/-*
Queen's Hotel	14/6	21/-*
Grand Hotel	10/6 to 13/6	17/6 to 22/-
Victoria Hotel	11/-	19/6
Grosvenor Hotel	10/6	17/-
Deansgate Hotel	10/-	15/-†

\*Including afternoon tea.

†Breakfast, lunch and high tea.  
Table d'hôte dinner not served.

#### ANNUAL SUBSCRIPTIONS

Members' subscriptions, Students' and Subscribers' contributions became due on 1 January 1932.

The amounts are as follow:—

Fellows .. .. .	£5 5 0
Associates .. .. .	£3 3 0
Licentiates .. .. .	£3 3 0
Students .. .. .	£1 1 0
Subscribers .. .. .	£1 1 0

NOTE.—By a resolution of the Council dated 20 July 1931, the subscriptions of R.I.B.A. members overseas who are also members of overseas allied societies are reduced to the following amounts as from 1 January 1932:—

Fellows .. .. .	£3 3 0
Associates .. .. .	£2 2 0
Licentiates .. .. .	£2 2 0

#### COMPOSITION OF MEMBERS' SUBSCRIPTIONS FOR LIFE MEMBERSHIP

The attention of Members is drawn to the scheme for compounding subscriptions for Life Membership which was approved by the General Body at the Business Meeting held on Monday, 5 December 1927.

Fellows, Associates and Licentiates of the Royal Institute may become Life Members by compounding their respective annual subscriptions on the following basis:—

For a Fellow by a payment of £73 10s. (70 guineas).

For an Associate or Licentiate by a payment of £44 2s. (42 guineas), with a further payment of £29 8s. on being admitted as a Fellow.

Provided always that in the case of a Fellow or Associate the above compositions are to be reduced by £1 1s. per annum for every completed year of membership of the Royal Institute after the first five years, and in the case of a Licentiate by £1 1s. per annum for every completed year of membership of the Royal Institute.

#### REINFORCED CONCRETE STRUCTURES

A Committee has been set up by the Building Research Board of the Department of Scientific and Industrial Research "to review present methods and regulations for the use of reinforced concrete in building and to make recommendations for rules of practice embodying the best available technical information and experience."

The immediate occasion for the appointment of this Committee was a request from the L.C.C. who wrote to the Department referring to the activities of the Advisory Committee appointed by them to consider and report on any necessary amendments of the London Building Act 1930. This Advisory Committee, it was stated, were impressed with the draft code of practice, drawn up by the Steel Structures Research Committee, for the use of structural steel in building, and considered that their work would be greatly facilitated if they could be furnished with a similar code for the use of reinforced concrete.

Sir George Humphreys is to be chairman of the Committee, Dr. Stradling executive officer, and there are to be representatives of the principal Institutions interested.

## Competitions

#### SCARBOROUGH: NEW HOSPITAL BUILDINGS

The Board of Management of the Scarborough Hospital and Dispensary invite architects to submit, in open competition, designs for new hospital buildings to be erected on a site on the Woodlands Estate, Scalby Road, Scarborough.

Assessor: Mr. H. M. Fairweather [F.].

Premiums: £300, £200 and £100.

Last day for receiving designs: 1 October 1932.

Last day for questions: 16 May 1932.

Conditions of the competition were obtainable on application (before 1 April) to Mr. J. Douglas Munby, Hon. Secretary, Scarborough Hospital and Dispensary, Scarborough. Deposit, £1 1s.

#### INVERNESS: NEW SCHOOL

The Inverness County Council invite architects, who have been in residence or in practice in Scotland since January 1931, to submit, in competition, designs for a new advanced division school to be erected at Inverness.

Assessor: Mr. James D. Cairns [F.].

Premiums: £100 and £50 to be awarded to the authors of the designs placed second and third respectively. The author of the design placed first to receive no premium but to be entrusted with the work.

Last day for receiving designs: 24 May 1932.

Last day for questions: 26 March 1932.

#### COMPETITION FOR LAY-OUT OF PIDGLEY ESTATE, DAWLISH

Members of the Royal Institute of British Architects and of its Allied Societies must not take part in the above competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

## Members' Column

#### APPOINTMENT WANTED

ARCHITECT F.R.I.B.A. with experience in the Dominions, Colonies and at home, in Government and private practice, will shortly, owing to retrenchment, be available for appointment at home or abroad. Special knowledge of Town Planning, Government and Educational buildings. Write Box 1011, c/o The Secretary R.I.B.A.

## CHANGE OF ADDRESS

MR. W. S. CORLETT'S [A.] address in future will be 177a High Street, Hounslow, Middlesex.

MR. GEORGE NOTT [F.] has removed his office from 7 St. Martin's East to 5 Museum Square, Leicester. Telephone, Leicester 58526.

## Minutes XII

SESSION 1931-1932

At the Tenth General Meeting of the Session, 1931-1932, held on Monday, 21 March 1932, at 8 p.m.

Dr. Raymond Unwin, President, in the Chair.

The attendance book was signed by 15 Fellows (including 3 Members of Council), 23 Associates (including 2 Members of Council), 6 Licentiates, 1 Hon. Associate, and a large number of visitors.

The Minutes of the Ninth General Meeting held on 7 March 1932, having been published in the JOURNAL, were taken as read, confirmed and signed as correct.

The Acting Hon. Secretary announced the decease of:—

Edwin Thomas Liddiatt, elected Licentiate 1931, Fellow 1931.

Larmont Douglas Penman, elected Licentiate 1912, Fellow 1929.

Richard John Tyndall, elected Associate 1909.

and it was Resolved, that the regrets of the Institute for their loss be entered on the Minutes and that a message of sympathy and condolence be conveyed to their relatives.

The following members attending for the first time since their election were formally admitted by the President:—

Mr. A. A. Stewart [A.].

Mr. J. G. Flatman [L.].

Mr. A. L. Rogers [L.].

Professor J. W. Mackail, M.A., LL.D., F.B.A. [Hon. A.], having read a Paper on "A Layman's Thoughts on Architecture," a discussion ensued, and on the motion of Mr. Cecil Lubbock, seconded by Mr. A. B. Knapp-Fisher [F.], President of the Architectural Association, a vote of thanks was passed to Professor Mackail by acclamation and was briefly responded to.

This concluded the business of the Ordinary General Meeting.

## Minutes XIII

At a Special General Meeting held on Monday, 21 March 1932, immediately after the Ordinary General Meeting above recorded and similarly constituted with the exception of the visitors who had been requested to retire.

The President announced that the meeting had been called for the following purposes:—

1. To consider the Council's proposal to amend the Declarations to be signed by Fellows, Associates, Honorary Associates and Licentiates, referred to in Bye-law 23 as Declarations A., B., C. and D., as follows:—

## A. FELLOWS

After the word "do" on line 2, delete the words "in consideration of my having been so elected," and insert the word "hereby."

## B. ASSOCIATES

Delete all the words between "undersigned" on line 1 and "promise" on line 5 and insert the words:

"being engaged in the study (or practice) of Architecture, having attained the age of twenty-one years, and having been elected an Associate of the Royal Institute of British Architects, do hereby"

## C. HONORARY ASSOCIATES

Delete all the words between "undersigned" on line 1 and "promise" on line 6 and insert the words:

"being interested in the study of Architecture but not following the profession of an Architect, and having been elected an Honorary Associate of the Royal Institute of British Architects, do hereby"

## D. LICENTIATES

Delete all the words between "undersigned" on line 1 and "promise" on line 5 and insert the words:

"being engaged in the study (or practice) of Architecture, having attained the age of thirty years and having been elected a Licentiate of the Royal Institute of British Architects, do hereby"

2. If the amendments are approved, to pass the following resolution:—

That the Declarations A., B., C. and D. referred to in Bye-law 23 be amended in the manner shown above and that the necessary steps be taken to obtain the sanction of the Privy Council to such amendments as is required to give effect to this resolution.

The resolution, having been moved by the Acting Hon. Secretary and seconded by Mr. Charles Woodward [A.], was passed by a unanimous vote.

The proceedings closed at 9.35 p.m.

A.B.S. INSURANCE DEPARTMENT.  
HOUSE PURCHASE SCHEME

(for property in Great Britain only).

Further Privileges now Available.

The Society is able, through the services of a leading Assurance Office, to assist an Architect (or his client) in securing the capital for the purchase of a house for his own occupation, on the following terms:—

## AMOUNT OF LOAN.

Property value exceeding £666, but not exceeding £2,500, 75 per cent. of the value.

Property value exceeding £2,500, but not exceeding £4,500, 66½ per cent. of the value.

The value of the property is that certified by the Surveyor employed by the Office.

N.B.—Legal costs and survey fees, and, in certain cases, the amount of the first quarter's premium payment will be advanced in addition to the normal loan.

## RATE OF INTEREST.

In respect of loans not exceeding £2,000 5½ per cent. gross.

" " in excess of " 5½ " "

## REPAYMENT.

By means of an Endowment Assurance which discharges the loan at the end of 15 or 20 years, or at the earlier death of the borrower.

## SPECIAL CONCESSION TO ARCHITECTS.

In the case of houses in course of erection, it has been arranged that, provided the Plan and Specification have been approved by the Surveyor acting for the Office, and the amount of the loan agreed upon, and subject to the house being completed in accordance therewith, ONE HALF of the loan will be advanced on a certificate from the Office's Surveyor that the walls of the house are erected and the roof on and covered in.

NOTE.—Since 1928, over £50,000 has been loaned to architects under this scheme, and as a result over £600 has been handed to the Benevolent Society.

If a quotation is required, kindly send details of your age next birthday, approximate value of house and its exact situation, to the Secretary, A.B.S. Insurance Department, 9 Conduit Street, London, W.

## R.I.B.A. JOURNAL.

DATES OF PUBLICATION.—1932: 16, 30 April; 14 May; 4 18 June; 9 July; 6 August; 10 September; 20 October.



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